

Third/Final Progress report

FSMIP Grant entitled:

**Southeastern Massachusetts – A Market Analysis for Value-Added
Opportunities in Lavender & Specialty Herbs**

The Pilgrim RC & D Area Council, Inc. has submitted the completed Literature Search and the Market research (see enclosed attachment – Lavender Market Analysis). This was done by Cynthia Barstow of Natural Products & Environmental Marketing. The analysis includes:

- Introduction
- Wholesale markets
- Related industries
- Cultivation and use.
- Oil production and value-added products
- Lavender oil Industry Trends
- Competitive analysis
- Target markets – wholesale oil buyers
- Direct Markets
- Travel and Tourism
- Lavender farms in the Unites States
- Agritourism industry
- Target Market: tourism
- Recommendations

A detailed botanical illustration of a lavender plant, showing several upright stems with narrow, lanceolate leaves and clusters of small flowers at the tips. Surrounding the main plant are various detailed drawings of individual floral parts: stamens, pistils, and seed pods (samaras).

Lavender market analysis

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Introduction

This report was written to assess the possibility and viability of lavender as an alternative crop for farmers in southeastern Massachusetts. Research, conducted via the internet, books, and conversations with lavender experts, looked at two major markets for lavender. These markets are A) the wholesale lavender industry, and B) the agritourism industry.

Data is presented from the more broad industry-wide perspective (natural products, cosmetics and tourism) to the narrow lavender-specific information to best describe the overall market. Connections between the trends found in the larger arenas with the regional lavender growing project are made in the concluding recommendations section. Macrotrends, typically found in the beginning of such a report, have been placed in the appendix as they have been reviewed by the consultant and are reflected in the overall report.

A. Wholesale marketing

Related industries

Perfumes and cosmetics

The table of contents for the 2000 edition of the annual Exposé magazine issue on cosmetics, fragrance, and bath products highlighted many of the trends that are currently influencing this industry. Selected article titles include: Aromatherapy - the sweet smell of success, Bringing Home the Spa - The home spa market, Culture, Color, & Cosmetics - Ethnic cosmetics market, Fragrance foundation update - male dollars and scents hold promise, and Propagating New Ideas - Natural additives in cosmetics. Other trends include a blurring of categories within the market, product safety concerns, and an increased demand for multifunctional products. Growing markets include the "ethnic" market, baby/youth market, and the men's skincare and fragrance market.

- During the 1930s, the perfume, cosmetic, and personal care industry established a "recession proof" image when inexpensive cosmetics outsold mid-priced food items during the Depression. Sales of cosmetics also fared well in the recessions of the 1960s and 1980s, however the recession of the early 1990's brought new challenges for the cosmetic industry. Many counterfeit products came on to the market, and consumers demanded low price, good value productsⁱ.
- "During the 1990s, research and technological improvements within the industry focused on reformulating products to move away from synthetic chemicals and rely on natural products. Consumers were becoming more knowledgeable about products that were good for them, demanding effective and appealing products. Within the class of natural products, the primary emphasis was on vegetable and plant materials. Chemists also sought to meet customer demands for mildness and reduced toxicityⁱⁱ."
- According to Jonathan Vine-Hall of Health & Beauty Solutions, "the single biggest trend [in the cosmetic industry] in the U.K., Europe, and the world is for naturally-based productsⁱⁱⁱ."
- In the 1990s, many companies introduced "green" products, these included Estee Lauder's Origins Natural Resource line of skin care, body care, aromatherapy and makeup products, and Revlon's New Age Naturals skin care products^{iv}.
- Along with an increased environmental concern came an increased desire for healthy products. Consumers were acting on the perception that what is better for the environment is better for people. The desire for healthy products caused an increase in the consumption of products containing proteins, vitamins, and botanical extracts^v.

- "Aromatherapy is now moving into the well-being area. Later this year, Avon will introduce Avon Wellness. These products are, I think, a result of people feeling stressed and having no time for themselves. Day spas are on the rise. Ten years ago, there were 30 day spas in the U.S. and now there are more than 2000. People want to pamper themselves. It's about inner and outer beauty^{vi}."
- The personal care consumer: Increasingly diverse & demanding lifestyles, looking toward internal as well as external well-being, causing a growth in natural and therapeutic trends^{vii}.
- Aromatherapy has been a "key" area of growth^{viii}.
- Current consumers have an expectation that body care products be multi-functional (i.e. makeup is now expected to have the additional benefit of being a sunscreen or emollient)^{ix}.
- Cosmeceuticals represent 27 percent of the U.S. skin care market^x.
- Overall growth of personal hygiene products has been 1.7 percent since 1996. Bath products offering aromatherapy or therapeutic effects are gaining influence. Body washes continue to be important in the U.S. and U.K.^{xi}

- Over the next five years, the global personal-care industry is expected to grow at a relatively low average of 1.8

Professional skin care product market size reported as sales in US millions of dollars

	1995	1996	1997	1998	1999	2000	CAGR*
France	143	145	132	143	136	128	-2.3 %
Germany	175	174	158	170	161	155	-2.4 %
Italy	173	189	178	190	181	170	-0.4 %
Spain	166	170	149	160	151	146	-2.6 %
UK	94	99	113	124	125	131	6.8 %
US	513	540	576	615	660	710	6.7 %
Total	1,264	1,317	1,306	1,402	1,414	1,439	2.6%

Source: Datamonitor

*Compound annual growth rate

percent a year. The increase in the market is expected to be driven by sales of skin-care and make up products. The highest growth rates in the global market will be in North and South America (particularly the U.S.) and Japan^{xii}.

- Over the next 10 years, boundaries in the cosmetic industry will become less meaningful. Beauty will be redefined in looser terms, as consumers seek "total well being"^{xiii}.
- The definition of beauty is moving away from being strictly aesthetic to being more emotional. Consumers will be looking for beauty products that give quick, tangible results, and are also enjoyable to use. This trend is driving the growth of the salon channel, and home spa products^{xiv}.

- Aromatherapy has made the jump from a niche market to the mainstream market, though lack of definition and lack of consumer education could hinder future growth^{xv}.
- Products are currently being positioned with emotional qualities such as fun or therapeutic, making the shopping experience more fun and pleasurable^{xvi}.
- In the fragrance industry, greater attention is being given to external well-being with products that promote skin care, are anti-bacterial, and prevent body odor. Convenience will be an important aspect of new products, and aromatherapy and therapeutic concerns are likely to become more important in the future^{xvii}.

Natural Products Industry

During the past few years, the U.S. has experienced a shift in how consumers view health and wellness. Consumers have a greater understanding and belief that their diet, supplementation regimens, and lifestyle can directly effect their health.

While the natural products market has expanded into the mainstream, with many natural products available in supermarkets, natural products retailers have maintained an important niche, providing a depth of product selection, and knowledgeable staff. Many natural products manufacturers and a majority of natural products consumers are values-drive and environmentally aware. These values frequently influence shopping habits^{xviii}. Unlike mainstream products marketed as aromatherapeutic, aromatherapy products sold through natural product stores are more likely to contain pure essential oils rather than fragrance or other synthetic oils.

Product sales in U.S. natural product stores				
	1998		2000	
	Total*	Organic	Total*	Organic
Personal care (Incl. Aromatherapy)	678	6.2%	954	27%
Herbs/ botanicals	926	18%	1135	13%

Source: Natural Foods Merchandiser, June 1999 and June 2001
* In millions of dollars

New products

The Fall edition of the New Product Review from NewHope.com featured 13 products, 7 of these products contain lavender. Among these products were a recently refurbished aromatherapy product line, aromatherapy candles, herbal salt scrubs, an energy clearing mist, a facial cleansing cream, and other organic skin care products^{xix}.

Top 10 categories of personal/body care products sold through natural product stores			
	1999 Sales US\$	2000 Sales US\$	Percent Change
Body lotions & creams	21,199,161	26,443,102	24.7%
Facial lotions & creams	19,795,461	21,323,880	7.7%
Bar soap	12,434,480	13,988,252	12.5%
Shampoo	11,976,231	13,847,969	15.6%
Toothpastes & tooth-powders	12,197,009	13,550,155	11.1%
Liquid soap	8,344,786	10,022,819	20.1%
Essential oils	7,308,555	8,833,674	20.9%
Facial cleansers/ exfoliants	7,649,333	860,052	17.0%
Conditioner	6,921,241	8,273,242	19.5%
Body wash/ bath gel	4,943,250	6,369,258	28.8%
Total top 10 body care	112,469,507	131,252,702	16.7%

Source: SPINS/Natural Foods Merchandiser

The summer edition of the New Product Review highlighted the Review's top 40 products. Among the eight stores surveyed for the review, five stores reported lavender based products as top sellers in their health and beauty aid departments. Products included Aura Cacia's lavender essential oil (a top seller in 3 stores), Organic Botanicals lavender shampoo, and Indigo Wild Zumar lavender mint bar soap^{xx}.

Hand made soap sales have increased significantly over the past several years, based on consumers' preferences for alternatives to the synthetic chemical-laden soaps available on the mass market. Many of the hand made soaps contain essential oils or herbs^{xxi}.

Organics

A key area of growth in the natural products market has been organics. Retail sales of organic products were \$1 billion in 1990, and grew to approximately \$9.3 billion in 2001. Driving this trend is an increased consumer apprehension about potential health effects of pesticides and commercial fertilizers^{xxii}. A report from the Natural Marketing Institute suggests that 43 percent of the general population purchases or has purchased organic foods. Many of these consumers reported initial use of organic products in 2000. Consumers who have purchased organic products for many years continue to increase the number of organic products that they are buying, due in part to a wider selection of products^{xxiii}.

Home spa

During the past decade the number of spas, and day spas in particular, has increased significantly. Spa-goers, however, tend to be people with several hours of time to spare, something lacking in the daily lives of most Americans. The cosmetics industry has recognized the desire for spa products among people who have never been to spas, but who know that "a spa is supposed to be a good thing"^{xxiv}. The all-natural ingredient list of spa products makes these products attractive to and well-suited to natural product stores and customers.

Aromatherapy Industry

"No longer the sole domain of the holistic set, (aromatherapy) has crossed over to the beauty and health-care mainstream with such corporate giants as Aveda, the omnipresent line of hair and home products; and Johnson & Johnson, which markets a bath product containing lavender and chamomile to soothe fussy babies." -Jenny Deam, Denver Post, 12/17/2001

The aromatherapy market has increased tremendously in the past several years. The U.S. market for aromatherapy products increased from \$316 million in 1996 to \$454 million in 2001^{xxv}. That said, it is important to take a closer look at the market itself. The aromatherapy market has encountered difficulties regarding definition. Despite its medicinal origins, "aromatherapy" has become a popular catch phrase for anything that smells pleasant, including everything from candles and potpourri to air fresheners and

personal care products^{xxvi}. The overall aromatherapy market is being driven by the pervasive consumer demand for more holistic “natural” products, although many of the products being marketed today as aromatherapy products are scented with synthetic fragrances.

- Aromatherapy products are showing a 20-plus percent annual growth rate^{xxvii}
- “In many cases, as with lavender, the most popular of all aromatherapeutic oils, the demand for the oil is higher than the actual production^{xxviii}”
- “Aromatherapy is where herbalism was 20 years ago^{xxix}”
- Spa treatments used to be reserved for the rich and famous, but recently, manufacturers have been making spa quality products (previously only available through spas) available for home use. “The notion that it’s actually OK, and not selfish, to look after oneself has influenced the popularity of home spa products^{xxx}”

Do-it-yourself healthcare among primary food shoppers in 2001

Vitamins/minerals	79 %
OTC drugs	79 %
Fortified foods	73 %
Rx medications	72 %
Herbal remedies	39 %
Aromatherapy	24 %
Homeopathic remedies	19 %

Source: Sloan, E. 2001. Nutraceuticals world, November.

Having exploded into the mainstream market, aromatherapy is now reaching into niches of this market, notably baby care products. A number of companies, including Johnson & Johnson, have recently developed all natural baby skin care and bath products that frequently include essential oils such as lavender, chamomile, and neroli. Products such as Bedtime Bath and Bedtime Lotion include lavender for its soothing and relaxing properties^{xxxi}. Expanding out from skin care, several toy companies, including Fisher-Price, Baby Boom, Imagiix, and Playskool have launched scented toys, marketed as aromatherapeutic.

Aromatherapy market size as sales in US dollars

	1996	1997	1998	CAGR*
France	6.4	7.1	8.0	11.8 %
Germany	3.6	3.9	3.9	5.0 %
Japan	82.2	94.9	112.9	17.2 %
UK	37.4	43.4	51.0	16.7 %
US	316.4	354.2	398.6	18.7 %
Overall	446.0	503.5	574.5	13.5 %

Source: Advanstar Communications, Inc.

* Compound annual growth rate 1996-1998

Cultivation and use

Lavender (*Lavandula* spp.) is a long-lived perennial plant native to southern Europe and the Mediterranean. The name lavender, derived from the Latin verb lavare "to wash" or "to bathe," refers to any one of approximately 20 species of small aromatic shrubs. Three species of lavender are grown for commercial use, details on these species are given below. For the two species of lavender suited for temperate climates, crop plantings are typically replaced every 8 to 10 years, although some commercial plantings have reportedly survived for up to 30 years^{xxxii}.

Species and varieties

There are three species (more correctly, two species and one hybrid) of lavender that are produced for commercial trade, English lavender (*Lavandula angustifolia* or *L. officinalis*), spike lavender (*Lavandula latifolia*), and lavandin (*L. angustifolia* x *L. latifolia* or *Lavandula* x *intermedia*). The three species of lavender vary in appearance, oil production, oil composition, and oil value. Each species has dozens of cultivars, cultivars vary in flower color, flower stem length, plant height, oil composition, oil production, and hardiness^{xxxiii}.

Most of the English lavender varieties are hardy to USDA hardiness zone 5, of the English lavenders, Hidcote and Munstead are the hardiest. The 'Lady' variety, hardy to zone 6, is said to produce the largest yields of all the English lavenders^{xxxiv}. The hardiness of lavandin varieties is quite variable, although 'Grosso', a variety recommended for oil production, is hardy to zone 5^{xxxv}. Spike lavenders are hardy to zone 8.

Climate and soil

In France, lavender grows naturally in well-drained calcareous (limestone-derived), stony ground^{xxxvi}. Generally speaking, lavenders will do best in a light soil, sand, or gravel exposed to full sun. English lavender varieties (*L. angustifolia*) prefer chalky, alkaline soils with a pH of 6.5 to 8.0, whereas the lavandin varieties require slightly more acidic soils^{xxxvii}. Lavender reportedly grows well with an average annual rainfall from 12-54 inches per year^{xxxviii}.

According to Oregon-based nurseryman Andrew Van Hevelingen, cold winter temperatures and high summer humidity experienced in the east coast states may promote the occurrence of fungal infections in lavender grown in these states^{xxxix}.

Propagation

While seeds are available for several varieties of lavender, growing lavender from seed is not recommended, as cross-pollination from bees usually results in high variability in plants propagated by seed. Instead, commercial stands of lavender should be cultivated from cuttings, ensuring uniformity in size and variety of the propagated plants. Once in the ground, lavender plants will require approximately two years to reach productive harvest levels.

Historical uses

The use of lavender dates back at least to the time of ancient Egypt. The Egyptians were the first peoples known to extract the essential oils of plants and are believed to have utilized lavender based oils for medicinal purposes.

Lavender has been in commercial production in France since the 1930's, while Yardley, the British perfume company, started making Lavender cosmetics and soaps in the 18th century. Lavender is traditionally used as a craft item and has found many uses dried loose or on the stems and grouped in bundles. The flowers, in the form of pot-pourri and in sachets, have long been used to help keep moths away and to generally enhance the aroma of rooms, closets and linens. For centuries lavender was a staple herb in cooking, used to flavor soups, baked goods, and other foods. The oil of lavender has enjoyed use as a sedative and disinfectant.

Modern uses

Many of the traditional uses of lavender are still popular today. These include lavender sachets and potpourris, scented soaps and detergents, lotions, and perfumes. Some newer lavender products include iron water and body mists. The use of lavender in cooking has become repopularized in recent years. Culinary uses of lavender include the flowers in baked goods, beverages, salad dressings, honeys, desert sauces, and perhaps most popularly, ice cream. Due in part to the efforts of lavender-promoting organizations, many chefs in up-scale restaurants (particularly those that specialize in French cooking) are developing and preparing lavender-based recipes.

Lavender is one of the top 10 most widely used essential oils in the practice of aromatherapy, a type of alternative medicine that utilizes specific smells (usually essential oils) for the prevention and treatment of disease. The essential oil is used topically in the treatment of minor burns.

Lavender based compounds are currently being investigated by several biotechnology companies for use in cancer therapies^{xi}. Recently published medical literature on lavender is focused on the efficacy and mode of action of aromatherapy to treat conditions such as acute pain, insomnia, and stress. Studies on topical use of lavender oil have examined the effects of the oil on conditions such as eczema and alopecia^{xii}.

Selection of varieties/cultivars

With numerous varieties of lavender and lavandin available, the selection of appropriate varieties is important to the success of a lavender operation. The primary consideration in variety selection is the end use of the product. Specific factors to consider are oil composition, flower color, shattering tendencies (whether flowers remain attached to the stem), and cooking flavor. Jadyne Reichner of Purple Haze Lavender (Sequim, WA) prefers the following varieties: 'Provence' for cooking, 'Melissa' and

'Grosso' for oil, 'Sachet' for sachets, 'Hidcote Giant' or 'Royal Velvet' for dried bundles, 'Lodden Blue' for landscaping, and 'Dutch Mill' or 'White Spike' for fresh flowers^{xlii}. Grosso is a lavandin that is frequently used for oil production, and while the oil quality is good, some sources suggest that the wholesale market for Grosso oil is near saturation.

Other similar crops

This report outlines two different markets for lavender, that for lavender as an essential oil crop, and that for lavender as an aesthetically pleasing agritourism crop. Thus, the heading of "other similar crops" may be divided into these two headings.

In terms of both touristability and commercial production, production of lavender seems to pair naturally with production of other essential oil crops. Some suitable perennial crops include German chamomile, peppermint, tarragon, and thyme. Biennial plants include angelica and clary sage. Annual essential oil crops are Roman chamomile, and anise. Tender perennials, grown as annuals, are rosemary and rose geranium. All of these crops are used in aromatherapy.

While some herbs are aesthetically pleasing, many have a rather simple look about them. Subtleties in color texture, and plant shape should be taken into account when using herbs to develop aesthetically pleasing plantings. Visually appealing herbs to pair with lavender include chamomile, clary sage, rosemary, and rose geranium.

Production of cut flowers is certainly pleasing to the eye, farmers utilizing the agritourism market may consider cut flower production either for sales to local florists, or for a pick-your-own flower farm section.

Essential oil crop plants		
Crop	Longevity	Preferred soil type
Anise	Annual	Light, well drained
Angelica	Biennial	Moist, fertile, peat-less soil
Chamomile	Ann/Peren	Light, slightly alkaline
Clary sage	Biennial	Well drained
Peppermint	Perennial	Moist, well drained
Rose geranium	Tend per	Sandy loam, moderate fertility
Rosemary	Tend per	Well drained
Tarragon	Perennial	Deep, fertile, well drained
Thyme	Perennial	Moderately fertile, well drained

Frontier Natural Products Co-op's Top 10 best selling essential oils

Lavender - *Lavandula angustifolia*
 Eucalyptus - *Eucalyptus globules*
 Peppermint - *Mentha piperita*
 Tea tree - *Melaleuca alternifolia*
 Patchouli - *Pogostemon cablin*
 Sandalwood - *Santalum album*
 Rosemary - *Rosmarinum officinalis*
 Ylang ylang - *Cananga odorata*
 Geranium - *Pelargonium graveolens*
 Clove bud - *Syzygium aromaticum*

Source: Natural Foods Merchandiser. Nov. 2000.

Oil production and value-added products

Oil production from different lavenders

Oil produced from the three commercial species are essentially synonymous with the three basic grades of "lavender" oil. English lavender oil (especially that produced in France) is considered the most valuable oil, with import prices at approximately \$20 a pound in 2001. Lavandin oil, which is produced in much greater quantities than laven-

der oil, sells for approximately \$10 per pound wholesale^{xliii}.

The major distinction between the three types of oils is the relative contents of linalyl acetate, linalool, 1,8-cineole, and camphor. The concentration of these four constituents determines the price, buyer, and use of the oil^{xliv}. Due to the similarity to English lavender and the lower price, lavandin oil is widely used as a low cost alterna-

tive to lavender in scenting soaps, detergents and cosmetic preparations. Spike lavender is also used to scent soaps and detergents^{xlv}. English lavender oil is used primarily for perfumes, high-end cosmetics, and aromatherapy.

Lavender and lavandin oils		
Constituents	Lavender oil % composition	Lavandin oil % composition
Linalool	30.1	34.3
Linalyl acetate	39.5	27.3
1,8-cineole	1.2	0.3
Lavandulyl acetate	2.5	1.0
Terpinen-4-ol	3.8	7.3

Source: Chopra, A. www.positivehealth.com

Art Tucker, a professor at Delaware State University and the country's authority on aromatic plant varieties, has indicated that commercially available lavender and lavandin varieties do not always match up with the standards for those varieties. In other words, lavender and lavandin varieties are distinguished most accurately by their essential oil "fingerprints," yet there have been instances when a variety sold, such as 'Hidcote Giant,' does not match the essential oil profile for that variety^{xlvi}. Improperly identified varieties can pose significant problems for growers attempting to meet certain oil standards.

In a recent article, Tucker specified two sets of standards for lavender and lavandin oils. The first set is from the International Organization for Standards (ISO), these standards represent the official international standards. The second set is from what companies are looking for when they purchase oils, these standards came from commercial oils arriving at the Port of New York.

Tucker has warned that many of the American growers that he has visited are cultivating improperly identified varieties and thus their oil does not meet standards. This fact, added to the fact that American growers cannot compete with major producers in countries where labor is inexpensive (such as Bulgaria and Russia) leads Tucker to suggest that American growers should not be concerned with oil standards, but should instead be focusing on the development of value-added products^{xlvii,xlviii}.

Acceptable ranges of percentages of the four chief constituents of lavender, lavandin, and spike as reported by ISO and commercial oils at New York

Commodity	1,8-cineole	camphor	linalool	linalyl acetate
Lavender				
NY	t-9 ¹	t-6	24-49	12-55
ISO	0-2	0-2	25-38	25-45
Lavandin 'Abrialii'				
NY	5-9	8-10	24-39	19-35
ISO	6-11	7-11	28-38	20-28
Lavandin 'Grosso'				
NY	4-6	6-8	27-32	30-37
ISO	4-7	6-8	24-35	28-38
Lavandin 'Maime Épis Tête'				
NY	n.r. ²	8	52	24
Lavandin 'Standard'				
NY	n.r.	9-10	37-45	17-25
Lavandin 'Super'				
NY	3-4	5-7	27-36	40-50
Lavandins all oils				
NY	3-11	5-12	24-45	17-50
Spike				
NY	21-31	10-17	30-46	1-2
ISO	16-39	8-16	34-50	t-2

Source: Tucker, A. 2001. Lavender Bag 15:11-14.

¹ t=trace

² n.r.= not reported

Yields

One of the major differences between English lavender and lavandin is the amount of oil that the plants produce. One acre of English lavender may yield 12 to 15 pounds of essential oil, whereas an acre of lavandin will yield 53 to 67 pounds of oil. This difference in production accounts in part for the very different prices paid for the two species. The price of lavender oil is about twice that of lavandin. Oil yields of either type of lavender will vary according to the climate, seasonal weather, rainfall, variety, and time of harvest.

Lavender and lavandin yields per acre		
	Dried flowers	Essential oil
English lavender	300-1800 lbs	12-15 lbs
Lavandin	3500-4500 lbs	53-67 lbs

Source: Foster, S. 1992. *Herbal Renaissance*.

Processing

Too many farmers, seeking to save their farms, tried to change over to the 'hot' crops. In doing so, most missed the whole idea of this form of marketing. Those who made a finished product (like frozen pesto) found it easier to survive the financial demand of [the herb] industry. Those who sought to grow raw materials found a more difficult row to hoe^{xlix}.

The type of processing used for lavender depends on the desired end product. Lavender flowers may be processed through drying, drying and bud stripping, or distillation. For bundles, lavender is harvested by hand, tied into bundles, and hung to dry. For the production of loose buds, lavender may be hung to dry in bundles, or dried flat on screens. Growers wishing to produce loose buds must identify or invent equipment

to remove the buds from flower stems.

Of the various methods of oil distillation and extraction, steam distillation is by far the most common method for distilling lavender oil. The advent of mobile distillation units has greatly improved the quality of lavender oil in recent yearsⁱ. Rather than sending the harvested crop to a specialized extraction facility, growers are now able to distill oils on the farm. On-farm distillation units have not only allowed for the production of better quality oils, but also enable farmers to produce a desirable value-added product.

For on-farm production of essential oils, a distillery (still) that produces a gallon of essential oil per batch and fits into a barn can be purchased for \$2000. Larger-scale distilleries are available and are used in areas with a number of large farms. Specialized facilities must be created to house the large stills, these facilities can cost upwards of \$500,000 to buildⁱⁱ.

The quality and composition of lavender oil is effected by the stage of blossoming, the time of day of harvest, weather conditions, and methods of harvest and storageⁱⁱⁱ.

Adulteration

Adulteration of lavender is rumored to be a significant problem in the essential oil industryⁱⁱⁱⁱ. The two primary constituents of lavender oil, linalool and linalyl acetate, can be produced synthetically at a fraction of the cost of natural oils^{iv}. Synthetically produced constituents are said to be frequently added to true English lavender oil to increase the volume of the oil.

In technical terms, linalool from lavender is (R)(-)-linalool, while synthetic linalool is a racemate with approximately equal parts of (S)(+)-linalool and (R)(-)-linalool. Up to 15 percent of (S)(+)-linalool can be accepted as normally induced racemization of genuine (R)(-)-linalool in natural oils, but higher amounts of (S)(+)-linalool indicate the addition of synthetic racemate^{iv}. To explain, the different linalools are essentially the same compound, just formed in slightly different shapes, racemization is when these differently shaped compounds turn into the other shape and an oil no longer contains purely one shape or the other. What all this means is that natural and synthetic linalools are quite similar, and highly specialized equipment is needed to determine whether a batch of lavender oil has been adulterated with synthetic compounds.

Oil quality

The essential oil industry recognizes three grades of essential oils, fragrance, commercial, and therapeutic. Fragrance oils are synthetic oils or highly adulterated essential oils, sometimes wrongly marketed as true essential oils. Fragrance oils are used in products such as air fresheners, detergents, and candles. A commercial grade essential oil is an essential oil distilled to preserve the top few (usually 10) oil constituents. Commercial grade oils are used to enhance the aroma of commercial foods, beverages, cleaning products, and body care products and may be used in conjunction with syn-

thetic fragrances. A therapeutic grade essential oil is an oil distilled to preserve as many of the naturally occurring oil constituents as possible (often over 300 constituents) and is created specifically for therapeutic use in aromatherapy^{lvi}.

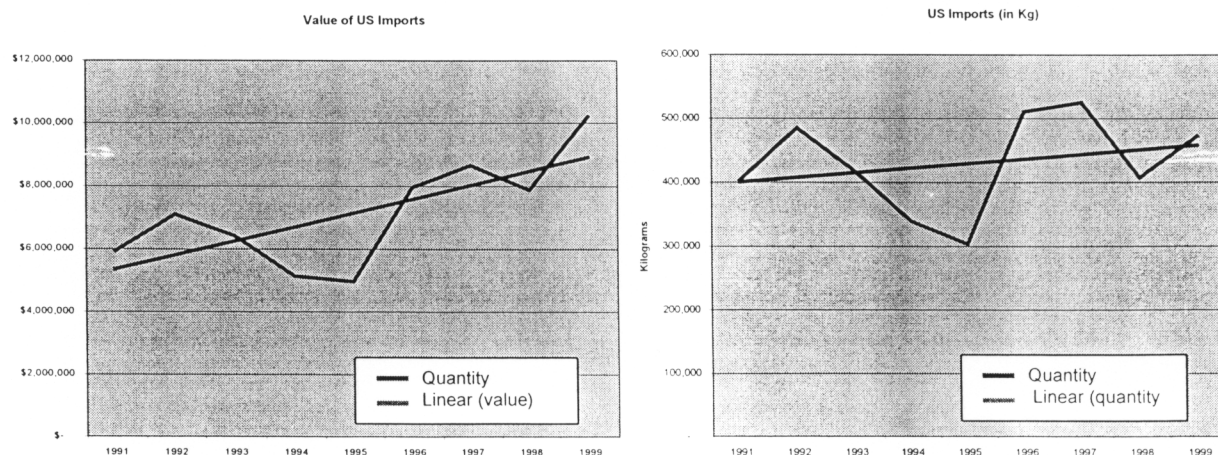
In the case of lavender, after 25 minutes of distillation, 75 percent of the essential oil constituents are extracted, however, after 1 hour and 45 minutes of distillation, the remaining 25 percent of the constituents are extracted. The difference between the two extraction times is the difference between a commercial grade and a therapeutic grade essential oil^{lvii}. Customers purchasing commercial grade oils are interested in a decent fragrance and reasonable price, whereas customers purchasing therapeutic grade oils are concerned with the quality of the oil and not the price^{lviii}.

Lavender oil industry trends

According to Jonathan Vine-Hall, Director of Health & Beauty Solutions, “younger consumers have discovered lavender. It is an old favorite and just needed to be made contemporary^{lix}.” Echoing this sentiment, Rhonda Whetham of Forever Lavender said that, “lavender has been moving in and out of favor for thousands of years. We are just entering a period of ‘favor,’ which is expected to last 20+ years.” Whetham warned, however, that “the market is currently approaching saturation and prices are falling. This is largely a result of large companies bidding down prices^{lx}.”

US imports

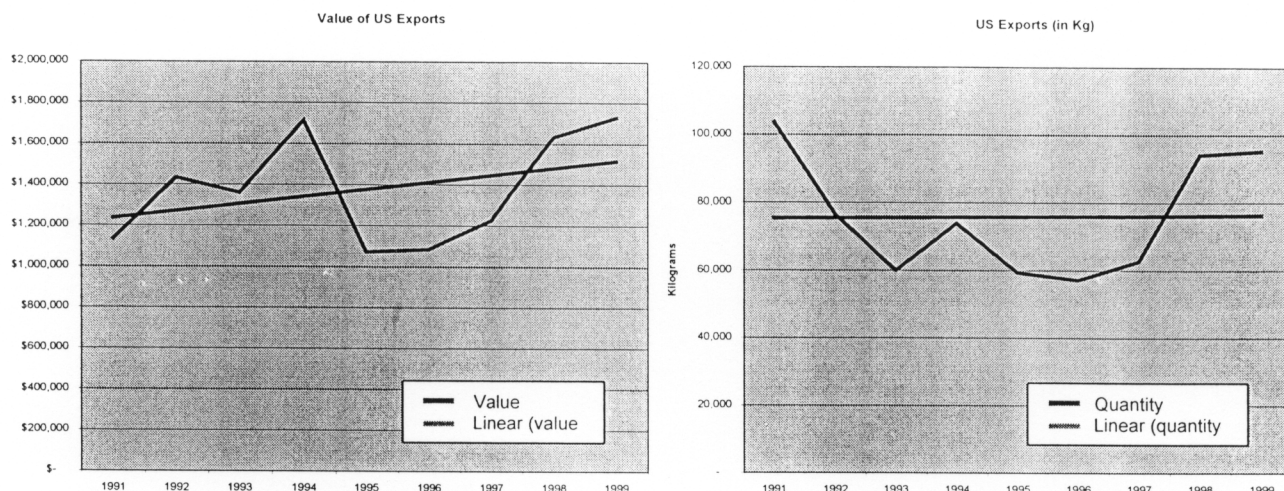
U.S. imports have experienced a volatile growth rate but as the trend line shows lavender imports are experiencing an upward trend. The value of U.S. imported lavender and lavandin has also grown over the past 9 years. The value of lavender imports has been less volatile because of a consistently rising average price per unit.



Source: USDA Foreign Agriculture Service

US exports

U.S. exports of lavender / lavandin have experienced a volatile export rate with a nine year high of 103,672kg down to 57,091kg in 1996. Within the past three years exports have grown from 62,670kg (in 1997) to 95,116 (in 1999), a 52 percent gain. The dollar value of U.S. exports has also been volatile, however the trend line does show positive growth.



Source: USDA Foreign Agriculture Service

Competitive analysis

International production

Information on the worldwide production of lavender is highly variable. Some data suggest that Bulgaria is the world leader in production, producing over 104 tonnes annually, with France producing 43 tonnes^{lx}. Other data suggests that France produced 15 tonnes of lavender annually, with Bulgaria only producing 10 tonnes^{lxii}. Other major production centers for lavender include Croatia, China, Russia, Australia, the U.K., and Spain. No matter which countries are producing the largest amounts, France is and will probably always be considered the home of lavender production. Lavender oil produced in France, particularly from plants growing at high altitudes, is considered the finest lavender oil.

Average annual production of lavender oil

Country	Tonnes
Bulgaria	104+
France	43
Croatia	22 (declining)
Russia	18
China	10+
Australia	4

Source: Aqua Oleum, Ltd.

Until 2001, the International Standards Organization (ISO) specified lavender oil as oil from *Lavandula angustifolia* that is "grown in the south of France," thus indicating that lavender grown elsewhere was not true lavender. The standards have been changed, however, allowing countries other than France to produce internationally acceptable lavender oil^{lxiii}.

In 1960, lavender production in France peaked, with approximately 130 tons of oil being produced. By 1992 production dropped to 30 tons, as many people left the French countryside to find employment in the cities. Renewed interest from consumers is currently helping to revitalize France's production^{lxiv}.

In Australia, New Zealand, the U.K., and parts of the United States, lavender production is increasing. Small farmers, struggling from competition with corporate farms or foreign competitors, are turning to lavender as a cash crop, anticipating that the plant will bring a greater income than traditional crops.

Growers organizations have formed in several parts of the world in the past decade. The New Zealand Lavender Oil Producers Cooperative was founded in 1994, and as of 1997 had 63 members. In order to join, people must be serious commercial growers and have 500 plants in the ground within three years^{lxv}. Australia has a similar organization, The Australian Lavender Industry. This group was responsi-

U.S. Imports of lavender oil by country of origin				
	1999		2000	
	Kilograms	Dollars	Kilograms	Dollars
Australia	0	0	895	17,750
Austria	7,140	356,887	600	27,058
Bulgaria	7,107	425,540	4,619	235,092
China	0	0	870	33,396
Costa Rica	0	0	0	0
Croatia	409	14,853	2,972	77,456
France	432,433	8,298,662	515,335	7,511,682
Germany	1,617	45,296	4,861	42,257
Hong Kong	0	0	1,500	72,000
Italy	389	24,706	443	18,769
Japan	0	0	0	0
Korea	0	0	0	0
Mexico	2,132	9,294	1,268	6,038
Moldova	404	24,210	0	0
Netherlands	702	29,718	960	48,024
Russia	365	21,655	2,169	102,729
Spain	8,960	272,995	6,570	107,128
Switzerland	1,250	50,705	2,010	29,252
Ukraine	0	0	0	0
United Kingdom	8,232	393,438	5,329	179,772
Other	230	8,995	4,222	191,085
Total	471,370	9,976,954	554,623	8,699,488

Source: Horticulture and Tropical Products Division FAS/USDA

U.S. Exports of lavender oil by country of destination				
	1999		2000	
	Kilograms	Dollars	Kilograms	Dollars
Argentina	2,118	44,380	834	12,712
Brazil	200	12,680	75	3,952
Canada	31,147	409,084	28,791	371,713
Colombia	1	6,212	0	0
France	1,121	72,276	1,096	16,940
Indonesia	0	0	0	0
Japan	0	0	0	0
Mexico	59,130	927,123	75,021	943,618
Netherlands	0	0	0	0
Philippines	0	0	0	0
Singapore	0	0	0	0
United Kingdom	935	238,897	4,045	378,695
Other	464	16,682	11,535	384,049
Total	95,116	1,727,334	121,397	2,111,679

Source: Horticulture and Tropical Products Division FAS/USDA

ble for the redefinition of the ISO standards for lavender oil. In both Australia and New Zealand agricultural extension services have been providing technical support to growers, with crop fact sheets and booklets, and information on distillation.

Southern England was formerly an important area of lavender production, but as housing demand around London grew, growers were forced out of their fields, and the industry died out in the 1930s. Growers in Kent, England are now replacing traditional crops of apples, pears, and hops with more profitable essential oil bearing crops such as chamomile, lavender and peppermint. A growers cooperative recently formed in Norfolk, England is producing several types of essential oils, and recently set-up a contract with the Body Shop.

In an attempt to economize lavender production, university researchers in the U.K. are currently developing a harvesting machine that will allow for more efficient, economically feasible production.

One publication for growers suggested that, in order to enter the essential oil trade, a stand alone lavender enterprise would require a farm size of 125 acres. If the target market of the farm is a niche market such as a small corner shop, aromatherapy use, or for tourists, a significantly smaller operation could certainly be viable^{lxvi}.

Target market: Wholesale oil buyers

According to Christopher Streicher of Iowa-based Amrita Aromatherapy, "the big broker houses that import oils mostly cater to the fragrance industry. They want a consistent and reasonably priced product, but whether it's 100 percent natural is not much of a concern^{lxvii}."

One of the largest U.S. distributors of essential oils currently buys the majority of their lavender oil from France, occasionally purchasing oil from Bulgaria. The company deals in both commercial and therapeutic grade oils. The buyer for this company said that he has been approached by domestic growers but that none of the domestically produced oils were enticing enough to make him want to change suppliers. Brief surveys of other buyers indicated that there is a demand for organically produced oil, and that buyers would be willing to purchase domestically produced oils provided that these oils were of high quality and were priced competitively with foreign oils. Several buyers indicated that they are currently purchasing both domestically and internationally produced oils. One aromatherapy wholesale buyer noted that she would be interested in a 40/42 grade oil.

Richard Alan Miller, an herb marketing consultant, indicated the names of several buyers that might be interested in purchasing domestically produced lavender oils. These companies included: Penta Manufacturing, Polarome, Robertet, E.L. Scott, Charabot, and Florasynth^{lxviii}.

ATL-Canada Wholesale Prices (from website)

Origin	Species	1/2 ounce	4 ounces
Lavandin Abrial (France)	<i>Lavandula hybrida (clone abrial)</i>	7.28	44.24
Lavandin Grosso (France)	<i>Lavandula hybrida (clone grosso)</i>	6.52	38.16
Lavandin Super (France)	<i>Lavandula hybrida (clone super)</i>	7.82	48.56
Lavender (Bulgaria)	<i>Lavandula officinalis</i>	9.79	64.32
Lavenders 40/42% (France)	<i>Lavandula angustifolia</i>	11.98	81.84
Lavender Alpine (France)	<i>Lavandula alpine (high altitude)</i>	15.85	112.80
Lavender Domestic (USA)	<i>Lavandula officinalis</i>	7.95	49.60
Lavender (India)	<i>Lavandula officinalis</i>	9.29	60.32
Lavender (Hungary)	<i>Lavandula officinalis</i>	12.96	89.68
Lavender (Russia)	<i>Lavandula officinalis</i>	10.42	69.36
Lavender Spike (Spain)	<i>Lavandula latifolia</i>	14.92	105.52
Lavender Wild (Turkey)	<i>Lavandula stoechas</i>	8.20	51.60

Provence scents (price per oz. Based on 1liter purchase)

Lavender Essential Oil Certified Organic	\$8.96
Lavender Essential Oil First choice, from highland	\$5.72
Lavender Essential Oil Variety "Maillette"	\$4.24
Essential oil of Lavandin Variety "Abrial"	\$1.50
Essential oil of Lavandin Variety "Grosso"	\$1.50

2001 import prices, FOB NY

Lavender	20.50/lb
Lavandin	10.50/lb

Miller, R.A. www.Richters.com

Flower products

Bundle dried flowers, retail (125-150 stems)	\$6.00-10.00/bundle
Bundle dried flowers, wholesale	\$2.00-3.00/bundle
Bundles dried flowers, high quality, wholesale	\$30.00/lb
Buds, stripped, low quality, wholesale	\$6.00/lb
Buds, stripped, high quality, wholesale	\$10.00/lb

Beus, C. 2000. Lavender Production & Marketing. Foodfarm, WSU.

- ⁱ Chemicals and Allied Products. 2001. *Encyclopedia of American Industries*. Third Edition, Volume 1.
- ⁱⁱ Chemicals and Allied Products. 2001. *Encyclopedia of American Industries*. Third Edition, Volume 1.
- ⁱⁱⁱ Emsley, J. 2002. A fresh start with today's busy lifestyles. Soap, Perfumery & Cosmetics. February.
- ^{iv} Chemicals and Allied Products. 2001. *Encyclopedia of American Industries*. Third Edition, Volume 1.
- ^v Chemicals and Allied Products. 2001. *Encyclopedia of American Industries*. Third Edition, Volume 1.
- ^{vi} Bager, Nancy quoted in: 2001 Annual national supplier roundtable. Global Cosmetics Industry. May.
- ^{vii} State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^{viii} State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^{ix} State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^x State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^{xi} State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^{xii} State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^{xiii} State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- ^{xiv} State of the Industry 2001. 2001. Global Cosmetics Industry. June.

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- xv State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- xvi State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- xvii State of the Industry 2001. 2001. Global Cosmetics Industry. June.
- xviii French, S. 2001. Statshot of consumer trends. Natural Foods Merchandiser. June.
- xix New Product Review, Fall 2001. www.NewHope.com. New Hope Communication. Accessed 12/20/01.
- xx New Product Review, Summer 2001. www.NewHope.com. New Hope Communication. Accessed 12/20/01.
- xxi Soref, Anna. 2000. Natural soaps have customers in a lather. Natural Foods Merchandiser. December.
- xxii Munoz, German. 2001. What's feeding organic growth? Natural Foods Merchandiser. June.
- xxiii Munoz, German. 2001. What's feeding organic growth? Natural Foods Merchandiser. June.
- xxiv Soref, Anna. 2001. Send the spa home. Natural Foods Merchandiser. July.
- xxv Lepir, Janae. 2002. Aromatherapy's Evolution. Expose. February.
- xxvi Lepir, Janae. 2002. Aromatherapy's Evolution. Expose. February.
- xxvii Clute, M. 2000. Sourcing real oils for aromatherapy. Natural Foods Merchandiser. September.
- xxviii Clute, M. 2000. Sourcing real oils for aromatherapy. Natural Foods Merchandiser. September.
- xxix Kellt, M. 1999. Smell the success of aromatherapy jewelry. Quote from Mindy Green. Natural Foods Merchandiser.
- xxx Soref, Anna. 2001. Send the spa home. Natural Foods Merchandiser. July.
- xxxi King, H. 2002. Baby care based on nature. Soap & Cosmetics. February.
- xxxii Foster, Steven. 1992. *Herbal Renaissance*. Gibbs Smith Publishers, Salt Lake City.
- xxxiii McNaughton, Virginia. 2000. *Lavender: the Growers Guide*. Timber Press, Portland, OR.
- xxxiv Miller, Richard. 2002. Lavender for oil. Q and A search results for "lavender." www.Richters.com.
- xxxv Ibid.
- xxxvi McNaughton, Virginia. 2000. *Lavender: the Growers Guide*. Timber Press, Portland, OR.
- xxxvii McCoy, Joe-Ann. 2000. Lavender: History, Taxonomy, & Production. Mountain Horticultural Crops Research and Extension Center Technical Report. Fletcher, NC.
- xxxviii Foster, Steven. 1992. *Herbal Renaissance*. Gibbs Smith Publishers, Salt Lake City.
- xxxix McNaughton, Virginia. 2000. *Lavender: the Growers Guide*. Timber Press, Portland, OR.
- xl Wallop, French. 1999. Unpublished document.
- xli Information from a MedLine database search on "Lavender" conducted 5/29/02.
- xlii Reichner, Jadyne. Cultivating Summer in Provence.
- xliii Miller, Richard. 2002. Lavender oil market spring 2001. Q and A search results for "lavender." www.Richters.com.
- xliv Miller, Richard. 2002. Lavender marketing. Q and A search results for "lavender." www.Richters.com.
- xlv Leung, Albert and Stephen Foster. 1996. *Encyclopedia of Common Natural Ingredients*. John Wiley & Sons, New York.
- xlvi Tucker, Arthur. 2001. Standards for lavender, lavandin and spike: commercial oils and cultivars. Lavender Bag 15:11-14.
- xlvii Ibid (Tucker, 2001).
- xlviii Tucker, Arthur. 2002. Personal communication, March 28.
- xlix Miller, Richard. 2000. Alternative markets for herb crops. Small Farm Today. November. p. 43.
- ⁱ Kilham, Chris. Personal communication, March 27, 2002.
- ⁱⁱ Adam, Katherine. 2002. Lavender as an alternative enterprise. ATTRA, Fayetteville, AR.
- ⁱⁱⁱ Adam, Katherine. 2002. Lavender as an alternative enterprise. ATTRA, Fayetteville, AR.
- ⁱⁱⁱⁱ Tucker, Arthur. 2001. Standards for lavender, lavandin and spike: commercial oils and cultivars. Lavender Bag 15:11-14.
- ^{liv} Aqua Oleum Ltd, Wallbridge, U.K. www.aqua-oleum.co.uk
- ^{lv} Tucker, Arthur. 2001. Standards for lavender, lavandin and spike: commercial oils and cultivars. Lavender Bag 15:11-14.
- ^{lvi} Cross, Deanna. 2002. The Essentials of selling essential oils. Natural Products Expo West.

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- ^{lvii} Zinovieff, Kolinka. The need for quality essential oils. www.positivehealth.com. Accessed March 27, 2002.
- ^{lviii} Cross, Deanna. 2002. The Essentials of selling essential oils. Natural Products Expo West.
- ^{lix} Emsley, J. 2002. A fresh start with today's busy lifestyles. Soap, Perfumery & Cosmetics. February.
- ^{lx} Whetham, R. 2001. King Estate Case. Unpublished document.
- ^{lxi} Lavender oil. www.Aqua-oleum.co.uk. Accessed April 10, 2002
- ^{lxii} Lavender set to be truly international. 2000. Soap, perfumery & cosmetics. Vol 73. P. 8.
- ^{lxiii} Lavender set to be truly international. 2000. Soap, perfumery & cosmetics. Vol 73. P. 8.
- ^{lxiv} Gibson, Nikla. 2001. Lavender lures tourists again. Ottawa Citizen. July 14. p. E9.
- ^{lxv} Chalmers, H. 1997. Special herb has many uses. The Press (Christchurch). Aug. 28.
- ^{lxvi} Biennu, Frank. Lavender growing for oil production. Agricultural Notes, Ovens Research Station, Myrtleford, Australia.
- ^{lxvii} Clute, M. 2000. Sourcing real oils for aromatherapy. Natural Foods Merchandiser. September.
- ^{lxviii} Miller, Richard. 2002. Lavender marketing. Q and A search results for "lavender."
www.Richters.com

B. Direct markets

Travel and tourism trends

National overview

The following synopsis of the travel market shares notable trends from the Spring 2001 when the initial research took place and for trends after September of that year when the travel industry was severely affected by the terrorist attacks.

In 2000, direct traveler spending in the United States by domestic and international travelers reached \$563.6 billion dollars, 5.7 percent of the nation's gross domestic product. This activity generated \$100.2 billion in tax revenue for federal, state and local governments.ⁱ Of the 997.6 million person trips, 75 percent were leisure travel and 77 percent used an auto, truck or RV for the mode of transportation. The top activities for domestic travelers were identified as shopping (33%), outdoor activities (17%) and visiting museums and/or historic sites (14%), in that order. The U.S. resident volume of trips mirrored the increase in population of 6 percent from 1994 to 2000.ⁱⁱ Spending by domestic travelers reached \$481.6 billion in 2000, registering an increase of 6.6 percent over domestic travel expenditures in 1999.ⁱⁱⁱ The travel share by month is as one might predict, slower in the winter months of January through March (5-7%) slowly growing in the spring to the heaviest traffic in the summer months of June - August (10-11%) and tapering off in the fall (8% each month).^{iv}

According to the TIA Domestic Travel Market Report 2001, Hotel/Motel/B&B's are used for over half (56%) of overnight trips in the U.S. This translates to 260 million overnight trips including a hotel/motel or B&B stay. Hotel/motel/B&B trips are more likely than the average U.S. trip to be taken for business reasons (45% vs. 22%). These trips are also more likely than average to be taken by air (34% vs. 18%). The average duration of a hotel/motel/B&B trip is 4.0 nights. One in six (17%) hotel/motel/B&B trips include children.^v

In early 2001, Business Week projected that the travel industry would begin a slowdown concurrent with the predicted economic trends. "After years of buoyant demand and modest capacity growth, the travel industry can count on only one side of that equation this year. Airlines, hotels, and car rental companies are still expected to expand cautiously, but it's questionable whether demand will keep up in a slowing economy."^{vi}

The TIA Traveler Sentient Index of the same period (first quarter 2001) showed modest increases in travel interest based in part on perceived availability to travel. It also indicated that across U.S. regions, the Northeast again shows the strongest gain mainly due to more positive consumer interest in taking a pleasure trip (up 17.6%) and perceptions of service quality (up 10.6%).^{vii}

Activity participation

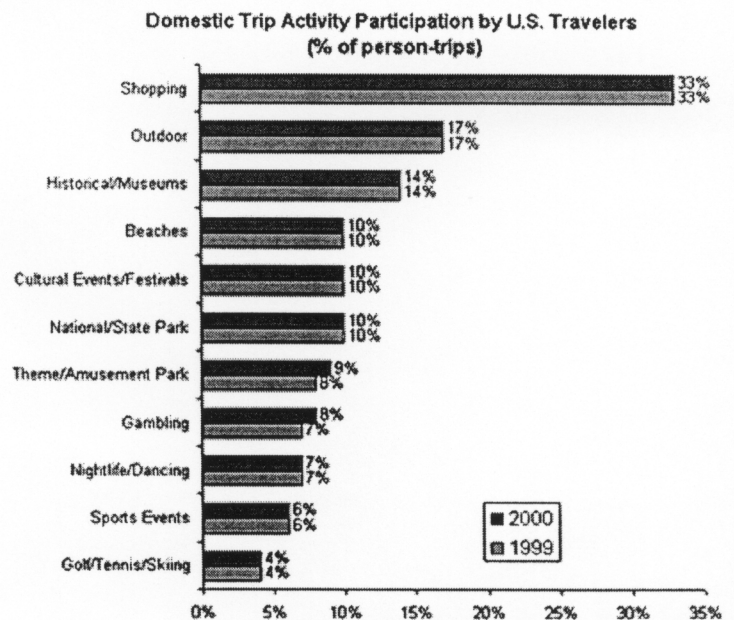
The top domestic trip activities continue to be shopping, outdoor activities and visiting museums and historical sights.

Shopping

About 91 million people, or 63 percent of adult travelers (as opposed to all person-trips) in 2000, included shopping as an activity on a trip. Because people can go shopping on more than one trip away from home, TIA estimates that 33 percent of all person-trips or over 333 million U.S. person-trips include shopping.^{viii}

Outdoor recreation

Outdoor recreation and/or visiting national or state parks is the second top activity for U.S. travelers taking leisure trips within the U.S. One in five (21%) leisure person-trips includes some form of outdoor recreation and/or a visit to a national or state park. Outdoor trips are likely to be taken by car (74%) and one in six (17%) outdoor trips includes camping in an RV or tent.^{ix} Camping is the number one outdoor vacation activity in America. One third of U.S. adults say they have gone on a camping vacation in the past five years and only 6 percent of people who have gone camping said it was not for them.



Source: Travel Industry Association of America; TravelScope

Historical/Museums/Festivals

Historical Places/Museums are popular attractions for U.S. travelers taking trips. Within the U.S., Historical places and museums are included on 14 percent of all U.S. person-trips. Trips including historical activities are more likely than other trips to be taken by air (22%) and to include a hotel stay (61%).^x The learning aspect of travel is important to U.S. travelers, with about one-fifth -30.2 million adults- having taken an educational trip to learn or improve a skill, sport or hobby in the past three years.

Festivals are a popular way for travelers to experience new and interesting cultures. One-fifth of U.S. adults (21% or 31 million) attended a festival while on a trip away from home in the past year. One third of festival travelers (33%) attended an arts or music festival in the past year, making it the most popular type of festival to attend while traveling. Of festival travelers, 22 percent attended an ethnic, folk or heritage festival. This was followed by county or state fairs (20%), parades (19%), food festivals (12%) and religious festivals (11%). Thirty percent of festival travelers attended a type of festival other than the six previously mentioned.^{xi}

Duration

Most of the travel in the U.S. is made up short trips. More than half of all travel in the U.S. is for two nights or less. Weekend travel is more popular than ever, with half of all U.S. adults -nearly 103 million- taking at least one weekend trip per year. Almost 30 percent of Americans have taken five or more weekend trips in the past year and 35 percent of all weekend travelers say they've taken their children with them on at least one weekend trip.^{xii}

Current and forecast

Following a golden decade of travel, the industry came to a screeching halt in 2001. A slowing economy in the first half of the year already had a number of segments in trouble, most notably the airlines. The events of September 11 made the inevitable all too real. Although consumer confidence is rising slowly, many tour operators are still reeling from sales lost immediately after the terrorist attacks.^{xiii} And while, eventually, people will feel comfortable about walking jet ways again, right now they are no longer willing to get on airplanes at the drop of a hat, or stay away from their families for more than a brief period. It is certainly no surprise that in November, the number of domestic passengers arriving to and departing from Logan International Airport had dropped 32.1 percent compared to November 2000.^{xiv}

While many Americans have avoided travel since Sept. 11, the nation's two largest recreational vehicle rental companies have been swamped with reservations for Thanksgiving and Christmas. They say it's the biggest increase in business they've ever seen and that many of the renters are first-timers (42 to 67%).^{xv} An increase in auto travel will be accompanied by closer-to-home activities.

While the travel industry as a whole is expected to suffer low numbers in 2001, a very modest increase is expected to begin in 2002. TIA's Travel Forecast Summary projects a 3.5 percent decrease in total domestic person-trips and a 12.6 percent drop in international visitors to the U.S. in 2001. They expect a 7.6 percent decrease in total travel expenditures. TIA also anticipates a modest recovery in the travel industry by 2002 with a 2.2 percent rise in travel expenditures and a minimal 0.3 percent increase in total domestic person-trips. Projections for 2003 parallel optimistic forecasting for the economy in general with an 8.2 percent increase from 2002 in expenditures and a 2.8 percent increase in trips.^{xvi}

Lavender farms in the United States

The website, Herbsearch.com, provides a list of 64 websites of lavender farms and related businesses in the United States, England, Canada, New Zealand, Australia, and France. Of the 64 sites, 35 are U.S. farms specializing in whole, or in part, in lavender production. Farms are located across the country with a number in Washington state, and others in Pennsylvania, Delaware, Virginia, California, Oregon, Maryland, Massachusetts, Tennessee, and Idaho.

All of the farms listed have diverse methods for selling their lavender and lavender products. Most of the farms sell their products on-line and on-farm, specializing in direct sales. Some farms sell wholesale products including dried flowers, flower bundles, and

essential oil. For direct sales, the various farms create and sell a wide variety of products including dried buds, flower bundles, wreathes, sachets, soaps, shower gels, body mists, lotions, iron waters, lemonade mixes, scone mixes, cookie mixes, and teas.

The following three farms are good examples of commercial lavender farms in the U.S.:

Purple Haze Lavender, Sequim, WA

Located in the lavender capital of the U.S., Purple Haze is probably the most well known lavender farm in the country. Purple Haze currently has approximately 10,000 plants of at least 15 varieties under cultivation on 7 acres of land.

We are an agritourism destination, hosting thousands of visitors each year. Our success has been a result of experiment and risk . . . broadening our marketing base at every opportunity: value-added products, internet site and sales, local, regional, and national advertising, catalogue production and sales, on site sales and classes, tours, festivals, and grower cooperatives^{xvii}.

Lavender Creek Farm, Mackinaw, IL

Lavender Creek Farm began commercial cultivation of lavender in 1999 and currently has 1500 plants in the ground. Creative marketing has been important to the farm, which offers for sale a wide selection of fragrance products through a number of venues including fairs, mail order, and on-line sales. A large on-farm store is scheduled to open this season. Open house events at Lavender Creek attract approximately 400 visitors.

Matanzas Creek Winery, Santa Rosa, CA

Matanzas Creek is a 20+ year old winery located in northern California's Sonoma county, and is home to the area's largest crop of lavender. Planted in 1991, Matanzas Creek has some 4,500 lavender plants on 1.5 acres of land. The two million lavender stems harvested annually produce a successful line of products, including lavender soap, bath salts, sachets, gift baskets, grilling sticks, fireplace bundles, woven lavender wands and potpourri. Bulk lavender is also sold to manufacturers and florists across the country.

I think, in time, we'll see as many people visiting Matanzas Creek for the lavender as for the wine. And that's great. We know that our business is selling great wine, but we also like to think we're a destination for people who appreciate the beauty of the land as much as they do a bottle of fine wine^{xviii}.

Agritourism industry

Long associated with the picturesque countryside of southern France, and having a scent that is widely appreciated, lavender holds a special place in people's hearts. Because of this, lavender is a crop that is very well adapted to agritourism. Lavender-based agritourism includes a number of types of attractions. Perhaps most common are single farm or regional lavender festivals, other types of events/attractions include pick-your-own lavender operations, non-festival farm tours, and bed and breakfasts situated on lavender farms.

Consistent with one of the larger agritourism trends of crop mazes, one lavender farm in Tasmania is home to “Tazmazia,” maintaining five separate mazes on seven acres of land. Many farms in the U.S. have created mazes, usually of corn, that range in size up to 18 acres. While some crop mazes are free to visitors, other farms charge \$5 to \$9 a visitor for entrance to their maze.

Lavender regional identity

Home to 17 lavender farms, Sequim, Washington is currently considered the capital of lavender production in the US. Each July, the lavender farms in and around Sequim host a “Celebrate Lavender Festival,” attracting approximately 20,000 visitors a year. The farms provide a significant boost to the local economy and are considered a part of the local tourist industry^{xix}. Local and state funds are available for promotion of the festival.

Of the 17 farms, 7 are open for tours and have various activities available to visitors during the festival. The farms offer picnicking areas, lavender margaritas, lavender ice cream, aromatherapy classes, massages, craft classes, photographers to take portraits in the fields, organic farming demonstrations, music, and other entertainment. Lavender products are available for sale during the tour, at least one of the farms has a pick-your-own lavender section open during the festival. A street fair in downtown Sequim is set up, complete with vendors, entertainment, demonstrations, and shuttle buses to surrounding farms.

The Franklin County Lavender and Herb Growers Association of Massachusetts has sponsored lavender tours the past two years, attracting approximately 500 visitors a year. It is interesting to note that the lavender farms in Franklin County are quite small, with the largest planting less than one half acre in size. The number of tourists attracted to a tour featuring a small amount of lavender testifies to the “touristability” of the crop.

International agritourism

The Provence region of France is a popular destination for tourists. Not surprisingly, a number of tours, both fully and self-guided, focusing on the lavender industry in Provence have been created.

Australian-based Aroma Tours is a company specializing in “travel experiences that will satisfy the senses and soothe the soul.” Aroma Tours currently operates six tours, the Turkish Rose Tour, Provence Aromatherapy Retreat, Provence Aromatic Tour, Essential Provence, Bali Women’s Retreat, and Australia Aromatherapy Retreat. The tours include visits to farms, markets, historical villages, oil distilleries, and talks with perfumists and aromatherapists. Tours including all meals, entrance fees, workshop fees, and tuition (no airfare) cost approximately \$1700 per person (double occupancy) for seven days.

Discover France tour operators offer a “Biking the Lavender Routes” tour. This is similar to the tour offered by Aroma Tours, with visits to farms, oil distilleries, museums, gardens, markets, fairs, and restaurants, encompassing the culinary and aromatic traditions of Provence. This seven day tour costs \$825 per person, double occupancy and includes meals, lodging, and luggage transfer.

Target market: Tourism

Baby Boomers generated the highest travel volume in the U.S. in 2000 (registering more than 245 million trips, more than any other age group) Boomers (35 to 54 year-olds) are most likely to stay in a hotel or motel (60%), travel for business (34%) and to fly (25%). Boomers spend more on their trips than other age groups, averaging \$479 per trip, excluding transportation to their destination.^{xx} More than half of children trips are taken by Baby Boomers (55%). One in five trips in the U.S. (22% or 125 million) include children 18 or under 18. Most (87%) trips with children are for leisure, nearly half of which are taken to visit friends or relatives. About 42 percent of overnight trips with children include a hotel stay. Mature Americans, aged 55 or older, average the longest stays away from home (4.9 nights, excluding day trips), with 18 percent staying seven or more nights away. Conversely, this group also has a relatively high share of day trips (21%). Even when including day trips in the average, mature travelers continue to rank first over other age groups with 3.9 nights average trip duration. Half (52%) of mature travelers stay in a hotel or motel on their trip, and four in ten stay at the homes of friends and relatives (43%). Mature travelers are the most likely of all groups to travel alone or with someone from outside their household (49%). They are also the most likely of all age groups to have household travel party sizes of two members (41%).^{xxi}

Exploring a destination on your own, at your own pace appeals to many Americans. Nearly one-quarter of U.S. travelers (34.8 million U.S. adults), have taken a vacation by themselves in the past three years. These travelers are less likely than total U.S. travelers to be married and to have children in their household. The solo vacationer is 42 years of age with an average annual household income of \$54,000.

Massachusetts Tourism

Direct traveler spending in Massachusetts, including both domestic and international, totaled \$13.3 billion during 2000, up 8.7 percent from the previous year. Massachusetts ranked fourteenth in domestic travel expenditures and seventh in international travel expenditures among all 50 states and the District of Columbia in 2000.

Half (50.7%) of all person-trips to Massachusetts come from the New England area, with 24 percent coming from the mid-Atlantic region. The top five states of origin for visitors to Massachusetts are Massachusetts, Connecticut, New York, New Hampshire, and New Jersey. Of all visitors, 20.2 percent are from Massachusetts, 15.2 percent from Connecticut, 15.1 percent from New York and dropping way down to 5.8 percent from New Hampshire and almost the same from New Jersey.

The share of visitors originating from these states varies by season. For instance, Massachusetts residents represent a greater share of seasonal visitors in the summer (24.2%) than in other seasons, whereas New Hampshire and New Jersey residents represent a greater share of visitors in the spring (9.5%; 8.3%) than in other seasons. Thirty-eight percent (9.5 million) of Massachusetts' 24.8 million domestic visitors come in the summer months. The autumn season hosts the second greatest number of visitors (6.6 million), followed by spring (4.8 million), and lastly winter (3.9 million). Among metropolitan areas, the Boston market ranked first (20.3%), the New York market second (17.9%), the Hartford/New Haven market third (12.8%) and again, with a big drop is Providence/New Bedford (4.8%).

Nearly half (42.5%) of the visitors to Massachusetts came to see friends and relatives. The next most often cited reason for visits dropped down to 14 percent with entertainment, 13.6 percent for business, 11.8 percent for personal, and 8.1 percent for outdoor recreation.

The mode of transportation most frequently used for travel to Massachusetts was own auto or truck (67.3%). The average trip duration for the state in 2000 was 3.9 nights, but the actual stay in the state was only 2.3 nights. A majority of visitors (35%) did not stay overnight and the hotel/motel/B&B stays were 32 percent in the statewide survey. After a similar percentage of overnight lodgings in private homes (27%), RV or tent stays dropped to 2.4 percent. Summer visitors report a significantly longer average length of stay than visitors of other seasons (4.5 nights, excluding day-trips). Additionally, a significantly smaller share of summer trips are day-trips (33.9%) than occur in other seasons. Compared to the annual average length of stay (3.7 nights, excluding day-trips), visitors in the spring stay significantly fewer nights (2.8 nights, excluding day-trips).

The average spending per trip statewide was \$431; travel party size - one at 47.6 percent and two at 30.6 percent; children in the household - none at 66.8 percent and both two and three at 13 percent. Nearly 80 percent of travelers had no one under 18 in their travel party. The vast majority (95.5%) of visitors were white.

Activities visitors enjoy in Massachusetts include shopping at 26.1 percent, historical places/museums at 19.0 percent; beaches at 11.2 percent; outdoor at 10.1 percent and cultural events/festivals at 10.0 percent.

Total domestic and international traveler spending in Massachusetts, including direct and indirect spending, reached almost \$21.5 billion in 2000, up 8.8 percent over the previous year. Total payroll income earned by travel-generated employees was \$7.4 billion in 2000, an 8.5 percent increase over 1999. Total travel-generated employment in Massachusetts, including direct and indirect, was 269.1 thousand jobs in 2000, approximately 8.1 percent of the state's total non-agricultural employment. Twelve counties in Massachusetts received over \$100 million in domestic travel expenditures in 2000. Six counties in Massachusetts indicated that approximately five thousand jobs were directly supported by domestic travelers.^{xxii}

2000 Domestic Travel Impact on Massachusetts
Table A: Alphabetical by County, 2000

County	Expenditures (\$ Millions)	Payroll (\$ Millions)	Employment (Thousands)	State Tax Receipts (\$ Millions)	Local Tax Receipts (\$ Millions)
Barnstable	\$713.06	\$201.97	9.39	\$28.72	\$38.11
Berkshire	253.62	69.16	3.33	12.17	6.29
Bristol	281.26	63.06	2.79	14.58	4.98
Dukes	105.01	29.04	1.31	3.83	5.47
Essex	583.17	150.29	6.70	30.14	13.79
Franklin	42.07	8.46	0.39	2.31	1.25
Hampden	336.33	80.02	3.30	17.98	6.02
Hampshire	75.41	17.86	0.79	3.94	1.86
Middlesex	1,589.72	473.90	20.04	83.95	38.15
Nantucket	152.97	43.84	1.65	4.22	4.71
Norfolk	627.01	215.83	8.76	32.55	12.46
Plymouth	326.45	70.10	3.24	15.46	13.58
Suffolk	5,565.09	1,603.27	55.52	139.32	91.78
Worcester	493.40	117.84	5.31	25.56	9.96
State Totals	\$11,144.57	\$3,144.65	122.52	\$414.70	\$248.40

ⁱ MOTT 2001

ⁱⁱ TIA Travel Statistics & Trends 2002

ⁱⁱⁱ MOTT 2001

^{iv} TIA Travel Statistics & Trends 2002

^v TIA Domestic Travel Market Report 2001

^{vi} Business Week Online 2001

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- vii TIA Traveler Sentiment Index First Quarter Results 2001
 - viii TIA Domestic Travel Market Report 2001 and The Shopping Traveler
 - ix TIA Domestic Travel Market Report 2001
 - x TIA Domestic Travel Market Report 2001
 - xi Ibid
 - xii Ibid
 - xiii Hoover online
 - xiv MOTT Travelstats Newsletter January 2002
 - xv USA Today November 2001
 - xvi TIA Travel Forecast Summary
 - xvii Reichner, Jadyne. Cultivating Summer in Provence.
 - xviii Our lavender. www.MatanzasCreek.com. Accessed May 1, 2002.
 - xix Adam, Katherine. 2002. Lavender as an alternative enterprise. ATTRA, Fayetteville, AR.
 - xx TIA Domestic Travel Market Report 2001
 - xxi TIA The Mature Traveler 2000
 - xxii MOTT data

C. Recommendations

- Focus on direct marketing rather than wholesale sales for primary product/market
 - Can't compete with prices of foreign producers (Bulgaria *et al.*)
 - Lack longstanding reputation of French producers (premium product)
 - Can take advantage of significant tourism of SE Massachusetts, Cape Cod, and the Islands
- Invest in agritourism
 - Develop a visual identity that utilizes the attractiveness and romance of lavender
 - Make an up front investment in an attractive website and tourist brochure
- Cooperate with regional and state tourism bureaus
 - Lavender related festivals and tours can be huge tourist draws if marketed properly
 - Tourist bureaus should be able to help with publicity and funding
- Develop a regional identity
 - Cooperate with as local and regional organizations willing to support and promote SE Massachusetts as a center of lavender production
 - Consider a grower cooperative – selecting appropriate roles such as most outgoing representative for consumer interface
- Provide education and technical support to interested regional growers
 - Introduce lavender to regional growers, provide assistance in establishing, maintaining, harvesting and processing crops
 - Provide marketing package, buy into growers or provide marketing education
- Plant trial crops of lavender
 - Test plots of lavender in different soils characteristic of the region
 - Trial a number of different varieties
 - Develop organic or environmentally sensitive cultivation methods
 - Have the essential oil content of different varieties analyzed and compared to international standards and oils currently being traded
- Carefully select lavender and lavandin varieties to plant
 - Determine desired products, plant accordingly
 - Base selections, in part, on oil analysis of trial crops
 - Plant several varieties of lavender to allow for different end products and mixing of extracted oils for sale

- If producing oil for wholesale, focus on therapeutic grade oil
 - Therapeutic grade oil is highest value
- Develop value-added products
 - Products that will be available to tourists on-farm and from website or catalog
 - Develop attractive, upscale labels and marketing materials (targeting tourists on their way to the Islands), independently and cooperatively
 - Insure products include quality bases – organic creams, sunscreen component, etc. – and meet customer needs, i.e. relaxation
- Invest in a distillery
 - Distillery (a.k.a. “still”) can be shared by growers
 - Can be used for other essential oils crops
- Cooperate with regional businesses for promotion and sales
 - Local/regional day and extended stay spas - coordinate tours to lavender region
 - Restaurants that will serve lavender inspired dishes
 - Tourist shops on Cape Cod and the Islands to carry local products
 - Local bed & breakfasts and camping facilities, consider on-site overnight accommodations
 - Historical sites
- Target Boston and Hartford/New Haven as primary tourist markets
 - Focus on promotion of aesthetic and health/wellness qualities
 - Understand aromatherapy effects and communicate
 - Package tours and distribute in New England, New York, and New Jersey

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Appendix I

Macroeconomic trends

Macroeconomic trends

Demographic Trends

Diversity

The United States' population is growing at approximately one percent each year with 39% of the growth coming from net international migration. In 2000, 28.4 million foreign born resided in the United States, representing 10.4 percent of the total U.S. population. Among the foreign born, 51.0 percent were born in Latin America, 25.5 percent were born in Asia, and the remainder were born in Europe or other regions of the world.ⁱ –Diversity in this country continues to increase. Today, approximately one-third of today's kids are minorities vs. one-fourth the same age group 40 years ago. "Approximately one in eight people in the United States are of Hispanic origin."ⁱⁱ It is projected that by 2050, non-Hispanic whites will account for 54 % of the population, down from 74% now. It is expected that Hispanics & Asians will constitute 61% of U.S. population growth from 1995 to 2025.

With minority influence projected at these rates, marketers jumped quickly to understand this significant trend, only to find out it is not as widespread as it would appear, but centered on several specific multiethnic counties. American Demographics led the way in breaking the diversity myth. "The fact is the largest blocks of Hispanics and Asians are clustered in only a few markets. Most markets beyond these "multiple melting pots" are largely white, or white and black."ⁱⁱⁱ The top ten Hispanic markets house 58% of the nation's Hispanic residents and 43% of all U.S. Asians live in three metropolitan areas. Of 3,142 counties in 1996, only 745 show white populations below the national white percentage (73%), and well over half (1,711) are at least 90% white.^{iv}

Aging

The U.S. population is aging. Currently one out of every ten persons is sixty years or older with estimates of one out of every five by 2050.^v The basis of this growth can be found in the Baby Boom generation – the population born between 1946 and 1964. The largest single generation group, Baby Boomers have lead many trends throughout their lifespan. "In 1996, the eldest boomers began celebrating their milestone birthday and since that historic day, a Boomer turns 50 years old every seven seconds. However, only 23% of all Boomers are 50 plus."^{vi} Several consequences of this demographic shift are anticipated. For example, over the next 30 years, the workforce of 55 to 64 year-olds is expected to expand by at least 8 million.^{vii} With recent medical improvements, the number of centenarians has increased significantly. The average lifespan today is 75 years compared to 47 at the turn of the century.^{viii} If this continues, it is suggested that by 2050, boomers 83 and older will be 37 million.^{ix} By 2030, the age distribution for the U.S. is projected to look like Florida is today.^x

Family Structure

In 1998, there were 70.9 million family and 31.6 million nonfamily households — 69.1 and 30.9 per cent of U.S. households. Fewer than half (49.0 per cent) of the family households had own children under 18 living at home and of that 27.3 percent were headed by a single parent. There were 2.1 million father-child and 9.8 million mother-child family groups. In the mother -child family groups, 42.2 per cent of the mothers had never married.^{xi} With this restructuring of family units come new parenting units including same gender couples and grandparents.^{xii}

Geographic Trends

Geographic trends show traversing across the country for all ethnic groups. American black population, currently concentrated in northern urban centers and the South are moving down to the metro areas of the "New South" (Atlanta, Raleigh-Durham, Houston.) White growth is mostly occurring in the Southeast, Texas, and the Rocky Mountain states near California. These gains are largely due to domestic migration, as whites follow job growth in high-tech, information-based industries. And the Hispanic/Asian communities are primarily the three largest metro gateways and smaller metros in California and Texas.^{xiii} A recent Census Bureau report concurred; "the nation's fastest-growing counties were in or near metropolitan areas of the South and West."^{xiv}

Generations

The generations are often clustered to determine trends specific to that particular group. Depending on the demographer, different labels have been attributed, but there is general agreement about the classification of the groups and the habits attributed to each:

Generation Y (b. 1980 to present) represents the children of the largest population group, the Baby Boomers. Techno-savvy, these individuals are growing up with computers in their homes and classrooms; cell phones, and cable. One-third of 6-7 year olds have TVs in their bedrooms.^{xv} One in four lives in a single-parent household. Three in four have working mothers. Raised in these dual-income and single-parent families, they've already been given considerable financial responsibility. Surveys show they are deeply involved in family purchases, be they groceries or a new car. One in nine high school students has a credit card co-signed by a parent, and many will take on extensive debt to finance college.^{xvi} A recent survey of the age group found more than 80% believe that it's "IN" to be smart.^{xvii}

This Baby Boomlet is currently considered, "by most calculations, already bigger than the baby boom: 77.6 million born since 1979 vs. 76.8 million from 1946 through 1964, according to the research firm Yankelovich Partners."^{xviii} But don't let that fool you. The group of youngsters is not evenly distributed across the nation; and is primarily delivered in counties of large minority populations. And the "pig in the python" movement of the boomers is more like two piglets, appropriately sounding, for the

boomlets. Two significant blips occurred from 1979 to 1994 resulting in large numbers yet without that enormous influence their parents brought with them.^{xix}

Generation X (b. 1965 to 1979) was once referred to as the generation of slackers, a mere 52.4 million compared to the previous gang of 25 million more.. No longer considered as such, their behavior is still cautious and somewhat disengaged. These young adults were raised within more divorced and latch-key homes than in any previous generations. "As young adults, maneuvering through a sexual battlescape of AIDS and blighted courtship rituals—they date and marry cautiously."^{xx} This moderately small group of approximately 50 million is slowly setting up homes and starting families. Politically, they lean toward pragmatism and nonaffiliation, and would rather volunteer than vote. "A wide sampling of surveys indicates that Xers are less politically or civically engaged, exhibit less social trust or confidence in government, have a weaker allegiance to their country or to either political party, and are more materialistic than their predecessors."^{xxi} Simultaneously, Generation Xers have led a renewed interest in spirituality and alternative health practices.

Baby Boomers (b. 1946 to 1964) have had the greatest influence of any single generation due to its enormous size of 77 million. For years, marketers have focused their attention on the lifestages of these individuals. Stay-at-home mothers armed with the advice of Dr. Spock raised this generation to be independent and in control of their futures. "During the 1960s, this manifested itself in the anti-authoritarian counterculture movement. In the 1980s, it translated into see-how-fast-I-can-get-rich materialism. In the 1990s, Boomer individualism was apparent in increased entrepreneurialism, the self-help movement, and the rise of New Age spiritualism."^{xxii} Today, "entering midlife (and national power), they are trumpeting values, touting a "politics of meaning," and waging scorched-earth Culture Wars"^{xxiii} Now, marketers are interested in the maturing of these individuals. Healthcare institutions, leisure travel groups, and retirement communities have been waiting for the Baby Boomers to age.^{xxiv} In response, boomers are creating a new life stage referred to as "mid-youth" with an emphasis on adventure travel, new careers, and self-health.

Swing Generation (b. 1933 to 1945) and *War Generation* (b. pre-1933) The Swing generation is not deemed as such because of its affiliation with an era of swing dancing, but as a small group before the War generation and after the Boomers. Their behavior tends to "swing" towards one group or another versus defining its own. They have been receiving attention due to their unique ability to live longer, healthier lives. Americans aged 65 or older number more than 33 million, and their ranks are growing. Approximately 1,050 more people over age 65 are added to the population each day.^{xxv}

Economic Trends

The economy has been a major focus of the past year. When the project first started, economists were beginning to forewarn investors that the heyday of the stock market would soon be over. After September 11, economists were sure the market would plummet. As it turned out, the dive was not as devastating as some had predicted. The Commerce Department announced recently that in the last quarter of

2001, the nation's economic output rose at an annual rate of 1.4 percent. That better-than-expected performance was driven by strong consumer spending and is a tribute to the resilience of the American economy in the aftermath of the Sept. 11 attacks. In all of last year, the economy grew by a meager tenth of 1 percent. There is some indication that the U.S.

Corporate layoffs have been significant over the past year. However these too may be slowing. The number of workers filing initial applications for jobless benefits fell for the fifth week in the last six, the Labor Department said today, a sign that layoffs are slowing. The six-week stretch of claims below 400,000 is the longest since before mid-April 2001, when the first recession in a decade was beginning.^{xxvi} More than a million jobs have been lost to the slowdown in the last year, and Mr. Greenspan reflected the overwhelming consensus among economists when he said he expected the unemployment rate to continue rising, even during a recovery.^{xxvii} Business Council survey of big-company chief execs finds 75% believe economy remains in recession, and 77% say economy is not likely to grow much this year, despite economists' growing optimism about recovery.^{xxviii}

This month (March 2002), 28% of Americans rate the current economy as excellent or good, while 16% give it a "poor" rating. Another 55% say "only fair." These results are virtually identical to those obtained last month, and show little substantial change since November.^{xxix}

Consumer Spending

Meanwhile, contrary to what is supposed to happen in a downturn, spending by consumers has remained strong, despite people's losses in the stock market, rises in unemployment and the sense of insecurity that followed Sept. 11. The housing market has also remained strong.^{xxx}

Spending on housing, automobiles, furniture, toys, fast food, physicians and dentists—almost everything that is routine and unrevolutionary—has rescued the economy from the collapsed investment in telecom networks and dot-coms and from the depressing effects of fallen stock prices.^{xxxi}

While the economy was booming and incomes were finally beginning to climb for those on the middle and lower rungs of the ladder, a "national culture of upscale spending" emerged, economist Juliet Schor wrote in *The Overspent American*. People are running up record levels of debt, she argued, in order to acquire bigger cars, bigger TVs, and bigger houses.

On the other hand, many affluent Americans, they say, are beginning to recognize that, "there's a very short half-life to the pleasure that comes from spending." Between 1990 and 1996, according to a survey by EDK Associates, nearly a fifth of the population made a voluntary effort to achieve a simpler lifestyle. About 85% of these "downshifters" reported that they were happier as a result.^{xxxii}

Work

And even with many working on the “more balanced” approach, Americans are working more than ever. Average hours of working per day is on the rise, number of dual-income earners is moving up and the increased participation of women in the labor force -- especially mothers with young children -- has changed lifestyles and consumer behavior.

The market is working more than ever. Only one in five works a traditional 7 hour day and 60% of men's and 40% of women's workdays already exceed 9 hours or more.

Those working more than one job nearly doubled from 1982 to 1996. The number of “involuntary part-time workers” has tripled since 1969. More than half of US households are headed by a woman working full or part time.

Although we have learned through the 90s to work more than ever, actual material success is giving way to values. “83% of women and 74% of men consider a work schedule which allows more time for family the most important job component.”^{xxxiii} Mid-career retirements may provide solutions. Increasingly over the next decade, consumers will take career breaks to home-school, volunteer, go back to school.^{xxxiv}

Widening Gap

Until recently household income was increasing at all income levels. Median income was the highest since 1969 at \$40,800 and poverty lowest since 1979 at 11.8%. Unfortunately, this has not changed the widening gap between the rich and the poor, one USA Today referred to as a “canyon.” One percent of the population owns nearly 42% of the nation's wealth (more than the bottom 90%); since 1980, income has grown 21% for the wealthiest one-fifth while meanwhile, wages for the bottom 60% have stagnated or dropped; and 10% of the population owns 90% of the value of stocks and mutual funds.

Recently, numerous reports have shown that the gap between the top and the bottom of the income scale is greater than at any time since the gap was tracked, back in the 1940s.

A new report by the Economic Policy Institute and the Center on Budget and Policy Priorities found that while the gap grew more slowly in the 1990s, the best economy in 30 years did not stop inequality's inexorable climb. In the 1990s, the inflation-adjusted incomes of the poor were flat, middle-class incomes grew only 2 percent (adjusting for inflation), while the average income of the top 5 percent grew by 27 percent.^{xxxv} A recent Roper poll calibrated the voters' ambivalence: When asked if government should try to close the income gap by imposing heavy taxes on the rich, 45 percent of respondents favored redistribution and 51 percent were against it.^{xxxvi}

Technology Trends

Expect technological innovations to become mainstream. By 2003, 30% of industrialized nations will use portable information appliances, fuel cell powered cars will be introduced by 2004 and alternative energy sources re expected to meet 30% of energy needs.^{xxxvii}

Technology is also changing the way we work. In 1994, 13.6% of downsizing was attributed to new technology. By 2005, 20% of all workers will be working from home as a result of technology.^{xxxviii}

According to American demographics, computers are in most homes—64 million households have home PCs, up from 52 million just two years ago and 56% U.S. population accessed Internet in November 2000^{xxxix} The Fourth Quarter 2001 Global Internet Trends report on Internet access and penetration found that 498 million people now have Internet access from home. According to the Pew study, Americans are making more online purchases and carrying out other financial transactions, as well as writing e-mails with more significant and intimate content.^{xl}

Security technologies, artificial intelligence, third-generation networking products and services, voice over Internet protocol, and all things wireless are the hot technology areas and trends that IT executives who spoke over the weekend at the annual Harvard Business School Cyberposium have on their radar screens.^{xli}

Security technologies, including biometrics like iris and fingerprint scanning, but also more intrusive and, therefore troubling, identity methods such as body scanning. Over and over again, executives noted that this area is going to be a big one in coming years, spurred by concerns after the September 11 attacks on the United States.

AI is moving more into the IT mainstream and is key to the concept of pervasive computing, with "intelligent" machines that respond to human needs and patterns. Future applications will involve sending robots into dangerous situations for police and military use, an application that has been employed in Afghanistan and will continue to evolve, said Helen Greiner, co-founder and president of iRobot, in Somerville, Massachusetts.

Societal Trends

Balance

A desire for balance seems to be the overarching societal trend today. One of the earliest millenium stories a few years ago in Brandweek, one of mainstream marketers' magazines, indicated, "A lot of optimism is welling up in the face of the millenium, about changing self and changing the world with new age spirituality, the 12-step movement and a world of sustainable resources." This on the heels of more than a decade of faster living, longer work hours, more pressure at home with dual-income

earners, seemed to be the cry for a more balanced existence. How this has manifested in a few short years is not the huge increase in voluntary simplicity as predicted by Gerard Celente (although some have taken that route), but instead a search for best-of-both-worlds solutions. At Roper Starch, they're called "cool fusion solutions." In this new consumer alchemy, opposites -- Western versus Eastern, work versus personal life, nostalgia versus the future -- not only attract, but they produce interesting new solutions. The results are often greater than the sum of their parts.

Rather than choosing between work or home, people are trying to integrate their careers and personal lives. They're investing in technologies that break down the walls between home and office. They're also infusing new ideas into the workplace, like flex-time/flex-place work schedules, casual dress codes, and bringing the dog to work. Americans are increasingly confident about their fast-paced future. They're more likely to say the pace of change has never been faster (81% agree, up 5 points since 1993), and to think that, in the long run, these changes "will be for the best" (69% agree, up 9 since 1993). At the same time, they're awash in nostalgia: 55% agree the "good old days" were better than the present, a complete turnaround from 1974, when the majority said the present was better.

Hence, we have the growth of "materialistic simplification" products and services like takeout dinners, lawn-care services, and new technologies that let you buy back time, and a host of books, seminars, and consulting services on "simplifying your life." There's a market: Fully 51% of Americans strongly agree that they would be "willing to pay" for products and services that "will make life easier for me and my family."^{xlii}

Health

Just like the contradictory trends associated with our lifestyle of balance, two different studies concur, Americans may want a healthy lifestyle, but more are losing the battle to obesity. "According to a study by the Addictive Behaviors Research Center at the University of Washington, "More than one-third are classified as obese, up from one-quarter in 1980."^{xliii} Subsequently, overweight consumers have spawned a diet industry with sales of \$35 billion in 1996, according to MarketData in Tampa, Florida.^{xliv}

Along with our ever increasing awareness and concern for health comes a thirst for knowledge. "Americans follow health news more closely than sports, business and finance, or entertainment news, according to the Pew Research Center for the People & The Press."^{xlv} As the computer-savvy baby-boom generation ages and encounters more health problems, boomers will turn increasingly to the Internet to investigate health problems and seek advice.

Environmental Trends

The widespread concern for the environment has become more obvious these past few years. In part, people tend to be more concerned about "mother earth" when most other aspects of their lives are under control. "The height of concern occurred, not

coincidentally, during the last economic boom in the late 1980s. The recession of 1991-92 dampened our earth-first zeal, and only in the last two years have Roper and ERA seen an upsurge-to-late-'80s levels of concern for all things environmental."^{xlvi} This is not to say citizens want the environment to be top-of-mind only at times of luxury problems. "Nearly six in 10 Americans desire a balance between economic growth and protecting the environment, but generally feel that protecting the environment should win out when both can't be achieved together."^{xlvii}

According to a CNN/USA Today/Gallup Poll conducted this March, "Americans are most likely to mention air pollution, water pollution, destroying rain forests, and global warming as the most serious environmental problems facing the U.S....85% said they personally worry about the pollution of rivers, lakes, and reservoirs, while 84% are concerned about the contamination of soil and water by toxic waste."

Interestingly, the activities citizens chose to support environmental causes have changed in the past ten years. In 1990, over 90% of Americans said they were willing to do the following activities to help the environment: Separate household hazardous wastes, take automotive oil to a center; recycle trash, limit use of fertilizer and pesticides, and support dog waste ordinances. In the 1998 NEETF/Roper reported 85% were willing to do the following: save electricity, buy 'green products,' conserve water; and recycle trash. Simple household behaviors, such as recycling (90%), reducing energy usage (83%), and trying to use less water (83%) are most common, closely followed by shopping behaviors. Many Americans say they have avoided environmentally harmful products (83%) or bought environmentally beneficial products (73%), an indication of the appeal of "green consumerism."^{xlviii} As more consumer buying opportunities present themselves as options to participate in the cause, Americans seize the day and thereby contribute to the phenomenal success of the natural products industry; organics in particular have been extremely successful.

When asked if they consider themselves an active participant in the environmental movement, sympathetic but not active, neutral or unsympathetic toward it, nearly 1 in 6 Americans (16%) say they are active in the movement. Another 55% are sympathetic toward the environmental movement, and only 5% are unsympathetic toward it.^{xlix}

Political Trends

President George W. Bush begins the month of March enjoying an 81% job approval rating, according to the latest CNN/USA Today/Gallup poll, conducted March 1-3. Each job approval rating for Bush since Sept. 11 ranks among the highest Gallup has recorded for any U.S. president, dating back to 1938, and no president has remained above 80% approval longer than Bush has.¹ Last year the country was split between the directions Congress wanted to take the country and those Bush wanted to take. Currently, Bush receives tremendous public support.

According to a February 2002 Harris Poll, the three most important issues people would like to see the government address include terrorism, the economy and

education, in that order. In a January CBS News poll, economy and jobs beat out terrorism for single most important problem for the government to address in the coming year.

Confidence in the military and the White House has changed significantly over the past year, according to a recent Harris Poll. The U.S. Supreme Court has remained^{li} virtually the same where major educational institutions have declined.

The World Trade Organization has received minimal attention since the Seattle riots. 62% consider U.S. participation in the WTO good, 22% consider it bad.^{lii}

ⁱ Census.gov March 2000 Foreign-Born

ⁱⁱ Census.gov March 2000 Hispanic Population in the United States

ⁱⁱⁱ Frey, William H. "The Diversity Myth" American Demographics June 1998

^{iv} Ibid

^v Census.gov

^{vi} consumertrendsinsitute.com

^{vii} American Demographics May 2000

^{viii} ww.mvr.org

^{ix} Fortune 1999

^x www.mvr.org

^{xi} Census.gov Household & Family Characteristics October 1998

^{xii} American Demographics 2000

^{xiii} Ibid

^{xiv} Rain, David "Fastest-Growing Counties Are Southern, Western and Predominately Metropolitan, Census Bureau Reports" March 11, 1999

^{xv} consumertrendsinsitute.com

^{xvi} Business Week February 1999

^{xvii} consumertrendsinsitute.com

^{xviii} Woodyard, Chris "Generation Y The young and the boundless are taking over pop culture" USA TODAY October 6, 1998 Pg. 1A

^{xix} McKibben, Jerome N. and Faust, Kimberly A. "The Baby Boomlet Goes to College" American Demographics June 1999

^{xx} fourthturning.com

^{xxi} The Atlantic Monthly August 1999

^{xxii} Official Guide to the Generations 1995

^{xxiii} fourthturning.com

^{xxiv} The Herman Group

^{xxv} Background, Complementary and Alternative Medicine Program at Stanford

^{xxvi} New York Times February 2002

^{xxvii} New York Times March 2002

^{xxviii} Wall Street Journal February 2002

^{xxix} Gallup Poll Analyses February 2002

^{xxx} The New York Times March 2002

^{xxxi} Newsweek March 2002

^{xxxiii} American Demographics September 2000

^{xxxiv} American Demographics February 2001

^{xxxv} Baltimore Sun February 2000

^{xxxvi} The Washington Post March 2001

^{xxxvii} The Futurist 2000

^{xxxviii} American Demographics August 2000

^{xxxix} American Demographics March 2001

^{xl} Cyberatlas March 2002

^{xli} PC World Feb 11, 2002

^{xlii} Berry, Jon "We Want It All!" American Demographics March 1999

^{xliii} Weissman, Rachel X. "Getting Bigger all the Time" American Demographics February 1999

^{xliv} Wellner, Alison Best of Health: Demographics of Health Care Consumers New Strategist Ithaca, NY 1998 p226

^{xlv} Ibid p139

^{xlvi} Eds, "Environmental Research Associates" American Demographics April 1999

^{xlvii} Green Gauge Roper Starch Worldwide EEN 1998

^{xlviii} Gallup Poll Analyses April 2000

^{xlix} *ibid*

ⁱ Gallup Poll Analyses March 2002

ⁱⁱⁱ Pollingreport.com

Appendix II
Search results from a Medline
database search on "Lavender"

**Relevant search results from a Medline
medical database search on "Lavender"**
Search conducted May 2, 2002

- ┌ 1. Hamada T. Yamaguchi M. Evoked and oscillatory neuromagnetic responses to sniffing odor in human subjects. *Behavioural Brain Research*. 123(2):219-23, 2001 Sep 14.
- ┌ 2. Inouye S. Uchida K. Yamaguchi H. In-vitro and in-vivo anti-Trichophyton activity of essential oils by vapour contact. *Mycoses*. 44(3-4):99-107, 2001 May.
- ┌ 3. Nagai M. Wada M. Usui N. Tanaka A. Hasebe Y. Pleasant odors attenuate the blood pressure increase during rhythmic handgrip in humans. *Neuroscience Letters*. 289(3):227-9, 2000 Aug 11.
- ┌ 4. Ching M. Contemporary therapy: aromatherapy in the management of acute pain?. *Contemporary Nurse*. 8(4):146-51, 1999 Dec.
- ┌ 5. Volz HP. [Phytochemicals as means to induce sleep]. [German] *Zeitschrift fur Arztliche Fortbildung und Qualitatssicherung*. 95(1):33-4, 2001 Jan.
- ┌ 6. Millot J. Brand G. Effects of pleasant and unpleasant ambient odors on human voice pitch. *Neuroscience Letters*. 297(1):61-3, 2001 Jan 5.
- ┌ 7. Sugiura M. Hayakawa R. Kato Y. Sugiura K. Hashimoto R. Results of patch testing with lavender oil in Japan. *Contact Dermatitis*. 43(3):157-60, 2000 Sep.
- ┌ 8. Itai T. Amayasu H. Kuribayashi M. Kawamura N. Okada M. Momose A. Tateyama T. Narumi K. Uematsu W. Kaneko S. Psychological effects of aromatherapy on chronic hemodialysis patients. *Psychiatry & Clinical Neurosciences*. 54(4):393-7, 2000 Aug.
- ┌ 9. Umezu T. Behavioral effects of plant-derived essential oils in the geller type conflict test in mice. *Japanese Journal of Pharmacology*. 83(2):150-3, 2000 Jun.
- ┌ 10. Anderson C. Lis-Balchin M. Kirk-Smith M. Evaluation of massage with essential oils on childhood atopic eczema. *Phytotherapy Research*. 14(6):452-6, 2000 Sep.
- ┌ 11. Masago R. Matsuda T. Kikuchi Y. Miyazaki Y. Iwanaga K. Harada H. Katsuura T. Effects of inhalation of essential oils on EEG activity and sensory evaluation. *Journal of Physiological Anthropology & Applied Human Science*. 19(1):35-42, 2000 Jan.
- ┌ 12. Daferera DJ. Ziogas BN. Polissiou MG. GC-MS analysis of essential oils from some Greek aromatic plants and their fungitoxicity on *Penicillium digitatum*. *Journal of Agricultural & Food Chemistry*. 48(6):2576-81, 2000 Jun.

13. Varma S. Blackford S. Statham BN. Blackwell A. Combined contact allergy to tea tree oil and lavender oil complicating chronic vulvovaginitis. *Contact Dermatitis*. 42(5):309-10, 2000 May.
14. Saeki Y. The effect of foot-bath with or without the essential oil of lavender on the autonomic nervous system: a randomized trial. *Complementary Therapies in Medicine*. 8(1):2-7, 2000 Mar.
15. Sugawara Y. Hara C. Aoki T. Sugimoto N. Masujima T. Odor distinctiveness between enantiomers of linalool: difference in perception and responses elicited by sensory test and forehead surface potential wave measurement. *Chemical Senses*. 25(1):77-84, 2000 Feb.
16. Kim HM. Cho SH. Lavender oil inhibits immediate-type allergic reaction in mice and rats. *Journal of Pharmacy & Pharmacology*. 51(2):221-6, 1999 Feb.
17. Cauffield JS. Forbes HJ. Dietary supplements used in the treatment of depression, anxiety, and sleep disorders. [Review] [59 refs] *Lippincott's Primary Care Practice*. 3(3):290-304, 1999 May-Jun.
18. Lis-Balchin M. Hart S. Studies on the mode of action of the essential oil of lavender (*Lavandula angustifolia* P. Miller). *Phytotherapy Research*. 13(6):540-2, 1999 Sep.
19. Sugawara Y. Hino Y. Kawasaki M. Hara C. Tamura K. Sugimoto N. Yamanishi Y. Miyachi M. Masujima T. Aoki T. Alteration of perceived fragrance of essential oils in relation to type of work: a simple screening test for efficacy of aroma. *Chemical Senses*. 24(4):415-21, 1999 Aug.
20. Degel J. Koster EP. Odors: implicit memory and performance effects. *Chemical Senses*. 24(3):317-25, 1999 Jun.
21. O'Brien DJ. Treatment of psoroptic mange with reference to epidemiology and history. *Veterinary Parasitology*. 83(3-4):177-85, 1999 Jun 30.
22. Romine IJ. Bush AM. Geist CR. Lavender aromatherapy in recovery from exercise. *Perceptual & Motor Skills*. 88(3 Pt 1):756-8, 1999 Jun.
23. Brand G. Millot JL. Henquell D. Olfaction and hemispheric asymmetry: unilateral stimulation and bilateral electrodermal recordings. *Neuropsychobiology*. 39(3):160-4, 1999.
24. Vernet-Maury E. Alaoui-Ismaili O. Dittmar A. Delhomme G. Chanel J. Basic emotions induced by odorants: a new approach based on autonomic pattern results. *Journal of the Autonomic Nervous System*. 75(2-3):176-83, 1999 Feb 15.

- ┌ 25. Diego MA. Jones NA. Field T. Hernandez-Reif M. Schanberg S. Kuhn C. McAdam V. Galamaga R. Galamaga M. Aromatherapy positively affects mood, EEG patterns of alertness and math computations. *International Journal of Neuroscience*. 96(3-4):217-24, 1998 Dec.
- ┌ 26. Inouye S. Watanabe M. Nishiyama Y. Takeo K. Akao M. Yamaguchi H. Antisporulating and respiration-inhibitory effects of essential oils on filamentous fungi. *Mycoses*. 41(9-10):403-10, 1998 Nov.
- ┌ 27. Bradshaw RH. Marchant JN. Meredith MJ. Broom DM. Effects of lavender straw on stress and travel sickness in pigs. *Journal of Alternative & Complementary Medicine*. 4(3):271-5, 1998 Fall.
- ┌ 28. Hay IC. Jamieson M. Ormerod AD. Randomized trial of aromatherapy. Successful treatment for alopecia areata. [see comments]. *Archives of Dermatology*. 134(11):1349-52, 1998 Nov.

Appendix III

Lavender farms in the U.S. and abroad

Lavender Farms in the U.S. and Abroad

1. www.lavenderfarms.com This site is the combined effort of 5 lavender farms of the Olympic Peninsula. You can visit each farm for lavender products, advice or plants.
2. www.purplehazelavender.com This was the first lavender farm I discovered on-line. Love the name. Have a neat lavender folder containing lavender samples and recipes. Also, lavender plants and products.
3. www.papagenos.com Has on-line newsletter (mostly sales) plants, gifts, seeds and recipes.
4. <http://www.marianzasreek.com> This is a vineyard that has supplemented their income with a hillside of lavender. They have a wonderful book, Fragrant Harvest. Lavender recipes from Celebrity Chefs.
5. <http://www.artisraftsgifts.com> Dried Lavender buds, dried rose buds and petals. Craft ideas. Unique jewelry.
6. Please visit us at www.SquawValleyHerbGardens.com
7. www.foreverlavender.com This is a lovely site by Rhonda Wheelham, author of the Forever Lavender Manual. You may purchase the book through her site along with other lavender products.
8. www.willowpondherbs.com This site has wonderful lavender and herbal jellies to enjoy. Their farm is a lovely place to visit and pick your own lavender.
9. www.norfolkavender.com This is the site of Norfolk Lavender. They have been producing lavender and making fine lavender products for many years. It's a place I long to visit one day.
10. www.capecodlavenderfarm.com Cape Cod Lavender Farm (Ph. (508) 432-8397 fax (508) 432-2741)
11. <http://www.guideweb.com/provence/musee-lavande/indexa.htm> A French lavender museum in Provence.
12. Lavender Online - Australian lavender newsletter.
13. Lavender Green - Lavender Farm in Western PA. Make sure you check out Camille's wonderful article on using lavender in Weddings.
14. Lavender and Herb Growers of Franklin County, Massachusetts. Membership based group who love growing, working with and/or marketing lavender.
15. The Manor at Cold Springs - <http://www.suzakzoo.com/lavenderfarm.html> A lavender farm in Delaware, with Bed and Breakfast. Contemplate staying in the historic room with whirlpool tub or the Mustard Knots. Does a walk through two acres of 2,600 lavender plants. Send your imagination wild? Pauline Pruitt is the owner and very knowledgeable about lavender. (302) 684-3352 lavendermz.com The annual lavender festival will be held on June 2 & 3, 2001.
16. Lavender Growers of Sonoma County, CA lavender farm. Grows Grosso variety of lavender. Lavender buds, stems, wands, postcards and greeting cards available.
17. Provence Scents - Bulk lavender from Provence, France.
18. Oropi Lavender - A family owned lavender farm in New Zealand.
19. Isle of Wight Lavender Farm - A lavender farm in England. This farm is part of a larger Staplehurst Grange - distillers of fine English fragrances.
20. Bridestowe Estate Lavender Farm - Located in Tasmania.
21. Pennine Lavender - Handmade lavender products from a small lavender farm in England.
22. DeBaggio 43494 Mountain View Dr. Chantilly VA 20152 (703) 327-6976

23. L'Occitane- A shop with lavender products packaged with style and beauty.
24. Lily Bee Lavender Farm - <http://www.eifrid.com/lilybee/> Fresh and Dried lavender available.
25. Australian Lavender Industry - <http://www.lavenderaustralia.com>
26. Lavender Earth - Growing Lavender in Memphis, TN.
<http://www.lavenderearth.com/garden/lavender.html>
27. Lavender Passion- <http://www.lavenderpassion.com.au/lavdprod.htm>
Australian art boutique with a passion for lavender. Many lavender products and gifts. Lavender culinary products too.
28. <http://www.headfamily.freemove.co.uk/lavender/index.html> -The Lavenders, The website of the National Collections of Lavandula in the UK. and information regarding The Lavender Bag. A newsletter regarding lavender and current research about lavender by Joan Head.
29. Lavender Frog - <http://www.lavenderfrog.com/index.html> A lavender Farm in Idaho. Lavender potpourri, balms, pillows, recipes, history, and more. Definitely worth a cyber visit.
30. <http://www.ornbaunlavender.com/products.htm> Ornbaun - Gibson Ranch: A California Farm that sells lavender products.
31. The Sawmill Ballroom Lavender Farm- An Oregon lavender farm
Home of 'Tuscan' lavender from Italy.
32. El Dorado Lavender Farm- <http://www.lavender4u.com/> Organically grown lavender. Many lavender products.
33. The Lavender Patch Farm in Australia -
<http://www.tourisminternet.com.au/yklfarm.htm> Incredible wide range of products!
34. <http://www.kordfarm.com> **Organically grown lavender and herbs**
Kord Farm
15694 Hillsboro Rd.
Purcellville, VA. 2011322
Phone: (540) 668-6687
Fax: (540) 668-6675
35. <http://www.lavenderbyrona.com/> Rona's lavender site. Lavender vinegars, teas, mustard, blends, and more.
36. THE LAVENDER FLEECE- Lavender plants and products.
Icelandic Sheep and lavender farm.
37. Sonoma Lavender Barn <http://sonomalavender.com/aboutus.htm> This Lavender Farm/Barn is a family run business. They carry many unique items for sale containing lavender. For example, lavender keyboard pillows to prevent carpal tunnel syndrome while working on the computer, lavender scarves and pajama bags.
Sonoma Lavender Barn ~ 8537 Sonoma Highway ~ Kenwood, CA 95452 ~ 707-833-1330
38. Barbara's Lavender - A lavender farm on Canada's Vancouver Island. Many lavender products and plants available. Including cologne, linen iron water, lavender room spritzer, shoe trees and culinary products like lavender mustard and honey.
Barbara's Lavender Farm
1355 Spruston Road,
Cassidy, BC,
Vancouver Island.
Canada
39. The Lavender Fields <http://www.thelavenderfields.com/> An organic

lavender farm in northern San Diego, CA. They grow "Provence" *Lavandula intermedia*. Distill their own essential oil. Carry bath products, linen water, candles and more.

40. Rusty Acres - www.rustyacres.com Handmade pine gift crates available with several lavender themes ie; Bodycare, Relaxing Morning with fruit scone mixes and lavender jelly/jam. Plus, a very interesting Gourmet crate with Herbs de Provence, culinary lavender and several lavender spice mixtures that sound mouthwatering.
They are writing a book on cooking with Lavender. Can't wait to see it!! It will be called Lavender Cuisine. The Bradys are kind enough to be sharing some recipes with us.
41. Okanagan Lavender Farm in B.C., Canada.
Owned and Operated by
Dave & Andrea McFadden
4380 Takla Road
Kelowna, British Columbia V1W 3C4
Phone/Fax: 250-764-7795
<http://www.okanaganlavender.com/Introduction.htm>
42. Lavender Hill Farm - <http://www.lavenderhillfarm.com/>
A lavender Estate in Oregon.
43. Aroma Tours Tours of Provence, France.
44. **Watercolor Lavender Farm** Check out the lavender recipes! They have been kind enough to share the recipes with us here at Herbsearch.com. Thank-you very much!
Watercolor Lavender Farm
2821 Hitchcock Rd
White Hall, MD. 21161
phone: (410) 692-2870
Fax: (410) 692-0300
email: wtrclr@bwillatlantic.net
45. Yardley of London http://www.yardleylondon.com/english_lavender.htm
46. Jersey Lavender A large lavender farm on Jersey, an island off of England. Grow lavender, distill and produce several product lines with the essential oil and hydrosol. They offer a cute cross stitch pattern for lavender on a sachet bag. Includes lavender.
47. Lyndoch Lavender Farm in Australia. Plants, essential oils, culinary, home and bath products.
48. Whitebay World of Lavender in New Zealand. Awesome photos of lavender fields and distillation. Body care products.
49. <http://www.essencedeprovince.com/> Lavender wreaths and products from Provence, France.
50. <http://www.pregnancy-morning-sickness.com/index.html>- This site has a very unusual product. They make lavender lollipops for pregnant woman to help reduce morning sickness. They also have other flavors such as ginger and lemon. The pops are also said to be helpful for other conditions that nausea is a concern, such as travel sickness and chemotherapy.
51. Sequim Valley Ranch - Wholesale lavender plants and dried.
52. Lavender Central - Family run lavender and tarragon farm. Organic lavender and products available.
53. Mountain Lavender - Lavender gifts, dried lavender, body lotions and more. Wholesale & retail
54. <http://www.pelindaba.com/> A lavender farm in Friday Harbor, WA. USA.
55. Lavande aromatiques N.S.W., Australia

56. The English Hampshire Lavender Company - Dried lavender, body products, house products such as lovely crochet covered hangers filled with lavender, gifts and essential oils.
57. The Lavender Patch Farm -**EMAIL:** info@lavenderpatch.com.au
R.S.D. 1023A,
Beechworth Road,
Yackandandah,
Victoria,
Australia. 3749. **PHONE:** (02) 6027 1603
58. Valley View Lavender Farm- South Central Idaho
<http://www.valleyviewlavenderfarm.com/>
Plants, fresh and dry lavender, candles, crafts, buds and more. Email:
al_peggy@valleyviewlavenderfarm.com
59. Shooting Star Lavender Farm in Oregon
<http://www.shootingstarlavender.com/>
17676 Beaver Falls Road
Clatskanie, Oregon 97016
Telephone 503.728.4236
Fax 503.728.2142
Email: throop@clatskanie.com
60. <http://groups.yahoo.com/group/LAVENDER-RECIPE/>
Recipes using the delightful herb lavender.
61. <http://www.lapaixherbaljourney.com/> Lavender Distillery in West Virginia.
Classes and Silver Labyrinth.
62. <http://www.jeanchristophecumin.com/accueil.html>- This talented
photographer has gorgeous photos of lavender fields in France.
63. www.tuscanfarmgardens.com Tuscan Farm Gardens
& Bed and Breakfast.
24453 60th Ave.
Langley, British Columbia, Canada V2Z 2G5
64. www.sequimvalleylavender.com
Lavender Ranch in Sequim, Washington.
65. <http://www.splendidpalate.com/> This is a really neat site combining history
with gourmet cooking products. Try their lavender cookie mixes, jam,
honey and more. They can also provide lavender party favors for your next
event.
66. <http://www.purplepastures.com/default.cfm>- wholesale lavender farm. Gift
basket program available.
67. Goodwin Creek Gardens- Lots of lavender varieties, information and other
perennials.
68. http://communities.msn.com/NEWTASTEOFFRANCE/CERAMICCOLLECTION/_whatsnew.msnw
Beautiful ceramics painted with lavender motifs.
- 69.

Appendix IV
Website front pages of different
lavender farms and festivals



Come Celebrate Lavender!

Sequim growers invite you to visit the farms,
 enjoy sunshine, landscapes of mountains,
 water, perfumes and colors.



The 6th Annual Celebrate Lavender Festival has expanded to 3 days! Join us July 19, 20, and 21, 2002 to experience the essence of lavender. Purple fields swaying in the breeze, heady aroma of sun-kissed flowers, a taste of lavender, the sound of music, bees humming blissfully in the fields, and much more. The Sequim community and the Sequim-Dungeness Valley Lavender Growers look forward to welcoming you to this year's festival.

The 5th Annual Lavender Festival was a huge success! An estimated 20,000 people attended the 2 day festival. A big thank you to all who came.

Experience All Things Lavender in Sequim, July 19-21, 2002

-Farm Tours -Street Fair
 -Demonstrations -Crafts
 -Cuisine -Entertainment

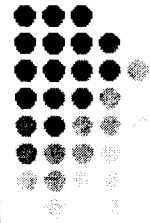


- [View Photos of Last Year's Festival](#)
- [Artwork Contest & View Past Year's Festival Art](#)
- [Enter the Lavender Festival Recipe Contest](#)
- [Give us Feedback About Last Year's Festival](#)
- [Learn more about Sequim.](#)

Thank You to our Sponsors


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Lavender Festival



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Pioneer Valley Lavender Festival

The 4th Annual Lavender Festival will take place on June 29 and 30, 2002 in the hills and valleys surrounding Greenfield, Massachusetts. Each year the festival grows in the number of lavender lovers attending and in the events being offered. The 4th annual festival will be even better than last year. Check back frequently to see what new events are being scheduled.

We invite you to join us in our quest. Sample and purchase our locally-produced products, visit our sites in beautiful western Massachusetts (just two hours west of Boston!) and get healthy as you inhale Massachusetts Lavender, fresh from our farms, gardens and fields.



The Pioneer Valley Lavender Growers thank you for your support.

For more information about the tour, contact Ellen Kaufmann, (413) 625-0078, e-mail ellen@pioneerlavender.com.

This site was last updated: 03 Feb 02



Our lavender farm is located
near Coeur d'Alene, Idaho.
We specialize in wonderful things

that are made from lavender.

Come see us at the
Farmers' Market
in Coeur d'Alene, Idaho.

The Market is open
every day and Saturday
and every day from 10:00 to 4:00.



100% Pure Lavender

Lavender

100% Pure Lavender

100% Pure Lavender

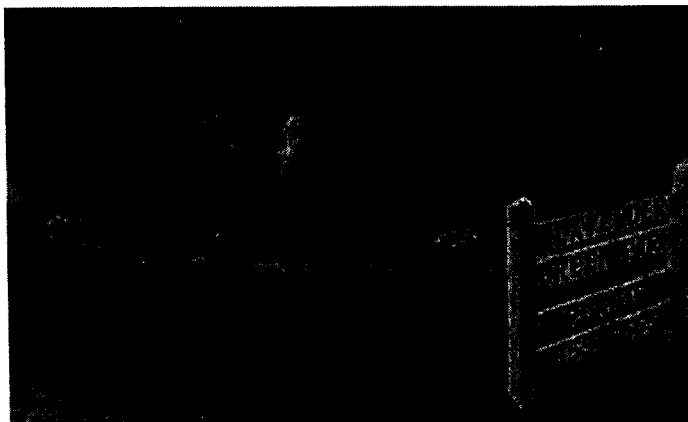


100% Pure Lavender

Lavender Creek Far

- Bath
- Body
- Sachets
- Sleep Aids
- Candles
- Cooking / Tea
- Plants
- Gift Wrap
- Benefits
- Visit Us

- Show Order
- Info
- Privacy Policy
- Search
- Index
- Y! SHOPPING**



Welcome to our organic lave farm. We grow a variety of la plants, and their flowers and become our natural lavender products for mind, spirit, and You'll be in for a treat!

Lavender is a traditional cott garden plant, as well as an a herb used for thousands of y cure illnesses and mask unp odors.

Use the buttons at left to lea about lavender, shop our pr and find out how you can vis farm and pick our lavender y

Bath

Body

Sachets

Sleep Aids

Candles

Cooking / T

Plants

Gift Wrap

Benefits

Lavender Creek Farm 32379 Rt 9, Mackinaw IL 61755
lavender@mtco.com 309-359-5555

www.lavendercreekfarm.com

Web site designed and built by Glenn Woodard.



The Lavender Fields™

- [Our Story](#)
- [The Notion of Lavender](#)
- [Lavender Farming](#)
- [The Nickel Tour](#)
- [The Fruit of our Labor™](#)
- [News/Activities](#)
- [Links](#)
- [Get in Touch](#)

Welcome to **The Lavender Fields™**, an organic lavender farm in the foothills of the Palomar mountains in northern San Diego county California, where we grow *Lavandula x intermedia* 'Provence', commonly referred to as 'French Lavender', known for its powerful, sweet fragrance and abundant display.

Our Mediterranean climate provides just the right environment for our fields. Every evening the Pacific Ocean marine layer moves slowly inland, blanketing our fields with a protective dew. The evening air comes alive with natural perfume. At daybreak the fog begins to move out, opening the fields up to another day of nurturing sunshine.

The *L. intermedia* plant is also extremely prolific. We hand cut enough bundles each harvest to supply plenty of material for crafting our fresh lavender baskets, wreaths and dried flower arrangements, sachets, lavender wands, smudge sticks, and loose buds for bath teas, bath salts and dryer bags.

Our choice to grow 'Provence' enables us to distill some of the finest essential oil right here at **The Lavender Fields™**. We use our oil as a primary ingredient in the many aromatherapy products we hand craft. After distillation, we use the hydrosols, also known as floral water, in making The Lavender Fields™ linen water and body spray.

We use no herbicides or pesticides in **The Lavender Fields™**. This keeps our fields buzzing with bees, covered in ladybugs, and alight with small yellow butterflies. **The Lavender Fields™** has now become a registered ORGANIC farm in the state of California. All our delightful products can now proudly carry the designation of ORGANIC, adding a true sense of 'natural' to our line.

Appreciating nature's aroma and sounds on your virtual visit will be difficult, but we'll do our best to convey the beauty and tranquility through our words and photos.

U-Pick Lavender Bundles

We'll be open from 9 a.m. - 5 p.m. on the last two weekends of April, and every Saturday and Sunday in May and June. Come out and be with the bees and butterflies during The Lavender Field's most glorious season. Please [click here](#) for more information.

The Lavender Fields™ - 2002 • All rights reserved
website • wind dancer consultants

center. Purple Haze, aromatherapy, lavender, sachet, dried lavender, lavender oil, lavender, lavender

THE PURPLE HAZE LAVENDER
FARM

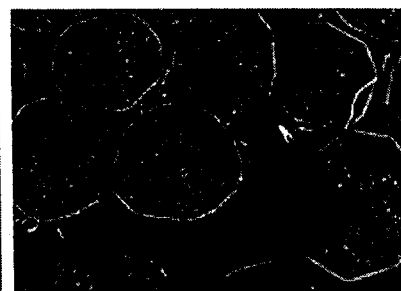
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growing lavender
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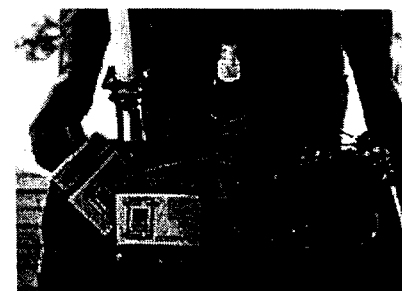
about purple haze



growing lavender



cooking & crafting



our store & products

The fragran
in summer is
and its purpl
right to behol
over 30 varie
in bloom at a
late June thr
August, and
downlow gift
year round. I
is also bloom
possibilities o
your home ar
uplifting and
with a wide
lavender pro

Our plant store is now open! Order now for spring planting.

Our certified organic lavender farm on the Olympic Peninsula of Washington State is one of the beautiful places in the Dungeness Valley. Our web site offers information about this fragrant herb, and a standing invitation for you to visit our farm. Download a map from our [about purple](#) you can't visit, please enjoy the beauty of our farm in the photos by Keith Lazelle.

To capture lavender's healing touch, we have created a line of natural aromatherapy product blossoms and essential oil. To bring beauty and fragrance into the home, we've tied bundles sewn the flowers into beautiful fabrics. To keep the summer alive in the kitchen, we have dev lavender culinary line including recipes, lavender honey, Herbs de Provence, and an assortm lavender teas. To order products, go to [our store](#). Our [cooking and crafting](#) page has instructi lavender wands, and several lavender recipes that were developed by our friend, chef Hope

To learn more about the therapeutic uses of lavender essential oil, our friend and aromatolog Lind offers the history and uses of this healing herb in the [about lavender](#) page.

If learning about how to grow lavender is your passion, we'll share our cultivation secrets for t perennial herb. You can learn how to plant, prune, harvest and dry lavender in the [growing lavender](#). We have selected the best lavender varieties on our farm, and offer them in our [purple haze](#) research and reading is the reason you visited our web site, we have our favorite resources we have teamed up with Amazon.com to help you find informative books on lavender: cookin gardening and many other great subjects. Check out our [books and more](#) section for great id lavender. Whatever your interest, enjoy learning more about this amazing aromatic herb!

Jadyne & Mike Reichner



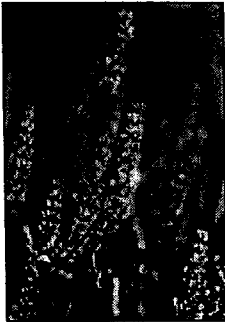
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www.purplehazelavender.com



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Our Lavender



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[Aromatherapy Products](#)

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[Barbells
the Same on the Inside](#)

Planted in 1991, the Matanzas Creek lavender field covers 1.5 acres. Some 4,500 lavender plants produce well over two million high-quality stems each year. This crop of lavender is Northern California's largest.

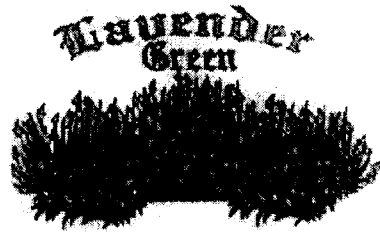
Like wine, lavender is a business for Matanzas Creek. The two million stems harvested annually produce a successful line of estate grown products, including lavender soap, bath salts, sachets, gift baskets, grilling sticks, fireplace bundles, woven lavender wands and pot pourri ([click here](#) to purchase our lavender products on-line). Bulk lavender is also sold to manufacturers and florists across the country.

"I think, in time, we'll see as many people visiting Matanzas Creek for the lavender as for the wine. And that's great. We know that our business is selling great wine, but we also like to think we're a destination for people who appreciate the beauty of the land as much as they do a bottle of fine wine."

For visitors to Matanzas Creek Winery, the gardens and lavender field are more than the source of a product line. They have become a place where the sheer beauty of Sonoma County is typified; a place where they can relax and relish the sensual beauty of nature; a place, perhaps, where the similarity to France's Provence is appreciated but supplanted by the spectacle and beauty of Matanzas Creek's Sonoma County.

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Matanzas Creek Winery



Welcome to Lavender Green. Lavender Green is one of the oldest commercial lavender farms in the United States. We continue to make and sell a variety of organic, dried lavender products perfect for countless occasions. At this website you can browse our online catalog of lavender and lavender products, and shop online. General information about lavender, lavender consulting services, and general information about Lavender Green can also be found at this website.

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home

oregon's largest lavender estate



Our farm, one hundred acres of wild land bordered by BLM (Bureau of Land Management) forest, is located in the Siskiyou mountains of Southern Oregon, overlooking the Little Applegate river valley

Please click here for contact information.

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Appendix IV

A calendar of lavender festivals in the U.S. and abroad

National and International Lavender Fairs and Festivals 2002

	Lavender Fairs If you are having a lavender fair or festival please email me and I will post the event. Thank-you.
Lavender: <u>Recipes</u> <u>Crafts</u> <u>Clipart</u> <u>Books</u> <u>Farms/Shops</u> <u>Fairs</u>	Warratina's Pre-Harvest Lavender Festival Sun 18 Nov 2001 9 am – 4 pm Warratina Lavender Farm, Quayle Rd, Wandin Yallock Dandenong Ranges Contact: Annemarie Manders, tel: (03) 5964 4650 Link: www.warratinalavender.com.au This Festival heralds the arrival of the lavender season, with musical, stalls and craft demonstrations. There are pony rides and a jumping castle for the children, lots of local produce to try and a highland pipe band to entertain you. Proceeds go to cancer research. Lavender Festival. Willow Pond Herb Farm June 14-16, 2002 Willow Pond Farm, 145 Tract Road, Fairfield, PA 17320. http://www.willowpondherbs.com Kord Farm's Lavender Festival June 15-16 10-4 PM Visit our beautiful lavender field and cut your own bunch of fresh lavender. Enjoy lots of lavender products. Take part in lavender related activities. Visit our "country store" www.kordfarm.com call (540) 668-6687 Sonoma Lavender Festival Saturday & Sunday, June 15 & 16, 2002 10am to 4pm http://sonomalavender.com/festival.htm 4TH ANNUAL LAVENDER TOUR JUNE 29TH & 30TH

9AM-4PM

**Sponsored by the Lavender and Herb
Growers of Franklin County, Massachusetts****Where:** The tour starts at the Visitors Center
in Greenfield, Massachusetts

A self guided tour of seven local farms and
businesses throughout the Pioneer Valley that
grow and use Lavender. Participants have the
chance to learn about growing lavender,
purchase hand crafted products, and attend a
variety of workshops and demonstration
including:

- Cooking with herbs
- Aromatherapy
- Candle Making
- Wand Making
- Distilling Essential Oils

Refreshments and lavender based cuisine will
be available at the Green Emporium Restaurant
in Colrain, as well as the Deerfield Inn in
Historic Deerfield.

Tickets: Available at the Visitors Center in
Greenfield (413)773-9393.**Tour-\$8.00 Workshops-\$5.00 each**

For More information contact Ellen Kaufman:
kaufmann@crocker.com or

(413)625-0078. Visit our website at
www.lavenderland.com

For Lodging Information, contact the Franklin
County Chamber of Commerce

(413)773-5463 or the Shelburne Falls Area
Business Association at (413)625-2526

**"Lavender & Herbs: From Garden to
Table"**

Saturday, June 29 only
Green Emporium Restaurant/Gallery

COLRAIN, MA (413) 624-5122
www.greenemporium.com

First Annual Franklin County Lavender Culinary
Group Event coinciding with : The Forth Annual
Franklin County Lavender Tour

Saturday, June 29 "From Garden to Table" will
feature a series of culinary events, demonstrations and
lavender displays at the Green Emporium Restaurant
in Colrain, MA.

Canterbury Shaker Village
Lavender Day
July 13, 2002

<http://www.shakers.org/>

Walk in the wafting fragrance of lavender gardens
and learn the art
of growing and harvesting it. Discover how to make
lavender wands,
and using lavender as a medicinal. An array of
lavender products
crafted on-site will be available for purchase in the
museum store.

Canterbury Shaker Village
288 Shaker Rd. Canterbury, NH 03224

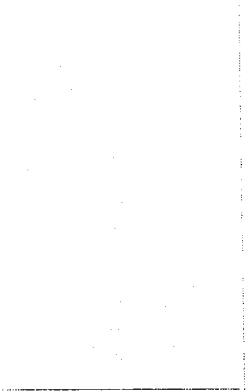
**6th Annual Sequim Lavender
Festival**

July 20 and July 21, 2002
www.lavenderfestival.com

Lavender Fair
June 28 & 29 2002

Tuscan Farm Gardens & Bed and Breakfast
24453 60th Avenue
Langley, British Columbia, Canada
V2Z 2G5

www.tuscanfarmgardens.com



The Lavender festivals in Provence, France:

- Ferrassière - end of June
- Valensole - end of July
- Volvent - beginning of August
- Digne - beginning of August
- Valréas - beginning of August
- Esparon sur Verdon - mid-August
 - Sault - mid-August

Your own web site available at www.rpproducts.com

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Appendix V
Estimated costs and inputs
associated with lavender production

Note: The following data is from a lavender production feasibility study conducted for King Estate Winery in winter of last year (2001).

Exhibit 3.0: Financial Assumptions

To complete the financial analysis several assumptions had to be made. The assumptions were purposefully made in a conservative nature to allow for fluctuations in estimated data. These estimates were derived from online research, conversations with lavender professionals, and discussions with various King Estate employees.

Selling Prices	Per Pound or Per Gallon	Per Milliliter
Wholesale Oil Prices	\$30.00 / pound	\$0.06 / milliliter
Wholesale Water Prices	\$20.00 / gallon	\$0.01 / milliliter
Retail Oil Prices	\$288.42 / pound	\$0.53 / milliliter
Retail Water Prices	\$224.00 / gallon	\$0.06 / milliliter

- **Harvest Quantities per Acre:**

Lavender oil in pounds: 40 lbs.
Lavender water in gallons: 150 gals.

- **Conversions used:**

Lavender oil: 7-pounds to 1-gallon.
Gallons to milliliters: 3785.86-milliliters in 1-gallon.

- **Lavender Plant Estimates:**

Plants per acre:3,000
Cost per plant:\$0.50
Plant cost per acre:\$1,500
Replacement costs after year 1, 10%:\$150

- **Labor Costs:**

Planting costs per acre: \$1,000
Replacement planting costs per acre:\$100
Tending costs per acre during years 1 and 2: \$500
Tending costs per acre after year 2:\$300
Harvesting costs (manual) 90-hours:\$756
Harvesting costs (mechanical) 4-hours:\$40

- **Materials Costs:**

Fertilizer costs per acre:\$300
Watering costs per acre during years 1 and 2:\$600
Watering costs per acre after year 2:\$100

- **Equipment Costs:**

Mechanical Harvester:\$20,000
Distillery:\$100,000
Assume that the harvester and distillery will be depreciated according to the 10-year MACRS schedule.

Appendix VI

Consultant summaries

Note: The following data is from a lavender production feasibility study conducted for King Estate Winery in winter of last year (2001).

Exhibit 2: Consultant Summaries

2.1 Dr. Don Roberts (Premier Botanicals): August 3, 2000

Comments on the Industry:

- Offer a variety of oils including lavandin. Lavandin can be considered the industry's commodity type product and it is useful to have it available along with higher quality products.
- Product knowledge is very important when dealing with buyers at the wholesale level. A marketer of lavender oil must be able to speak using industry specific terms.
- It is important to stay current with industry developments; Be aware of other products being produced in the industry.
- The essential oils industry is very "tight-knit". It can be very hard for a new producer to break into this industry.
- Buyers have a tendency to talk to each other, almost to the point of antitrust.

Estimated oil yields:

Type of Lavender	1 st Cutting	2 nd Cutting
Buena Vista	60-80 pounds / acre	30 pounds
SH #3	60-80 pounds / acre	30 pounds
Lavandin	Up to 140 pounds / acre	50 pounds

- Currently Dr. Roberts acts as a consignment wholesaler for a lavender grower in Yakima, WA. This grower distills SH #3. Dr. Roberts currently pays \$22.0 /pound for the oil.

First Step:

- To begin to show-up on buyers "radar" Dr. Roberts recommends King Estate send out samples of our Buena Vista oil. Dr. Roberts recommends that this be accomplished through himself or someone already dealing with the industry. He estimated that he would need a pound of oil to complete this task.

2.2 Rhonda D. Whetham (Forever Lavender): August 4, 2000

Comments on the Industry:

- Currently the wholesale market is approaching saturation and prices are falling. This is largely a result of large companies bidding the prices down.
- Lavender farms in France have fallen by almost 50% due to the drop in wholesale prices.
- For oils to be sold on the wholesale market they must meet ISO standards.
- Ms. Whetham has been contacted by several other wineries regarding the planting and harvesting of lavender. She believes it will soon go "hand-in-hand" with wineries.
- Currently the Australians are generating the best industry and scientific information.

- Lavender has been moving in and out of favor for thousands of years. We are just entering a period of "favor", which is expected to last 20+ years.

Comments on Oils:

- Grosso lavandin is moving rapidly towards a saturated market position.
- The higher the ester count the sweeter smelling the oil. Generally, the higher the ester count the better the oil.
- King Estate can expect a quality difference between French grown and Oregon grown oils. The French oils will be of superior quality.
- The higher the elevation the better the oil.
- Freezing the oil can help remove any excess water from the oil increasing the quality without harming the oil.
- Aging the oil for 1+ years will dramatically improve the quality of the oil. It will smell sweeter.

Comments on Soil:

- Lavender grows best with a high soil ph of 7.0 – 8.0. The high ph helps produce sweeter lavender.
- Most areas require 1-2 years to prepare the soil usually using lime.
- Soil needs to have all major and minor trace elements. If it doesn't they need to be added.
- Do not fertilize after fall harvest. Fertilize after dormancy break, usually in March or April.
- Fertilize with a nitrogen mix in the spring and a calcium lime mix in the fall.
- Soil must have good drainage. Good drainage can be the difference in getting 5 year plant life or 15 year plant life.
- Crop must be rotated approximately every 10 years.

Comments on Harvesting:

- Harvesting should occur when the plant is at 1/3 post bloom, 1/3 in bloom, and 1/3 buds. This is the optimal time to harvest for distillation.
- After plants are harvested cuttings should be bundled and set on the plant to dry in the sun for 1 to 3 days. This helps remove excess water before distillation.
- Precautions should be taken to remove leaves before distillation. The leaves are made of different compounds and will affect the quality of the oil; if not removed oil may not meet ISO standards.
- Blends of many different types of lavender oils can produce better, more natural oil.
- Manual harvesting is preferred to mechanical harvesting. Increased plant damage can be expected with mechanical harvesting.

Comments on Watering:

- Plants will need water, August through September.

Recommendations:

- Carve a niche market. King Estate should plant and use a lavender variety that no one else is using.
- King Estate should create a lavender test garden to use for experimentation.

- Market lavender products internally, it is difficult to breakeven in the wholesale market.
- Ms. Whetham expects that much of our revenues will come via the Tasting Room and the website.
- Create value-added products with lavender such as lavender flavored honey.
- King Estate should have its oil analyzed by a second person. Ms. Whetham recommends Dr. Arthur Tucker. This can be used to determine if King Estate's oil meets ISO standards.
- If King Estate is serious about lavender production it should send someone to the International Lavender Conference this October in Australia.

2.3 Joseph Blum (Sawmill Ballroom Lavender Farm)

Comments on Planting:

- It will take 2-years of growing before a plant will be mature and begin oil production.
- Lavender should be planted in rows with 2-3 feet between rows to allow for adequate airflow.
- Airflow is critical in the winter to keep plants free of molds and root rot.
- If plants are in a location that receives any shade there will be a noticeable decrease in yield.
- Planting is maximized in September for 2 reasons: Over the winter plants will develop good root growth and during the winter plants will not require watering.
- Lavender needs to be planted with care. The plants can't "just be slammed into the ground." Lavender needs to be bedded-in carefully, crowns up.
- Weed suppression will be needed 1-2 times per year. Mulching for weed suppression can provide food and aid in water retention.

Comments on Plant Selection:

- Diversification of the types of plants will help hedge King Estate against problems associated with different cultivars of lavender. Having several types of lavender will allow for blending possibilities.
- Consideration should be given to the planting of a test plot of lavender to help identify various varieties that are particularly well suited for this location.
- King Estate should contract with a grower for the needed lavender plugs. Contracts need to be established ahead-of-time to insure that enough plugs are available.
- Lavender plugs do not take particularly well transplanted directly into the field. Plants should be grown in a greenhouse until they fill-out a 4" pot. At this size King Estate will experience a very small loss of plants during transplanting.
- It is very important to get a good, trustworthy supply of plants. There are a lot of suppliers that don't know exactly what they are selling. It will be important that a representative from King Estate visit the supplier and view their operation first hand. Request to view the parent plants to see exactly what is being purchased.
- Plants must be pruned before winter, a conservative rule of thumb "have pruning completed before September."
- Lavender plants like "sweet" soil, so it advisable to add lime to the soil.
- Lavender is very pest tolerant.

Comments on Harvesting:

- Plants must be harvested in a timely, expedient manner just like grapes.
- Harvesting practices will affect the quality of oil, just like the harvesting of grapes can affect wine.
- Mechanical harvesters can do a good job as-long-as care is taken.

Comments on Marketing:

- Become "Certified Organic." This will add value to the product and margin to the bottom-line. Organic products will survive an industry consolidation much better because it is harder to imitate.
- Use a focus group or testing of many different lavender oils to see what variety potential customers prefer. Base plant variety selection from this information.
- If we want to sell part of our product wholesale; once the oil is produced call several botanical companies and "unload" it that way. The market has been starved for oil and companies will generally buy anything they can get.
- Sell the majority of our product direct. Contact organizations such as Bed & Breakfasts of America or the Natural Food Association. Many of these organizations have trade publications, which would be an excellent place to advertise.
- Sell to small soap producers. In Eugene alone there are 100+ small-scale soap producers.
- By selling direct King Estate can sustain wholesale price fluctuations much better.
- The market is women. The labeling must reflect this. The label needs to be feminine and "old-worldly." This is what the market is looking for.
- To test labeling ideas have a group of women choose the best label from a selection of purposed labels.
- The wholesale market is very price sensitive and subject to rapid fluctuations.

General Recommendations:

- King Estate should appoint someone to be in charge of the lavender. They need to be passionate and knowledgeable about the plant and products. This will help sell the product both directly and on the wholesale market. (I.E. King Estate needs someone that knows lavender like Brad knows grapes.)
- If lavender is an afterthought it will probably be an annoyance for King Estate. But, if there is a person assigned to it, lavender will work well.
- Because of peoples' passion for lavender, people will begin to come to King Estate to see our lavender. Plant the lavender along the driveway between the grapes and the pavement. Plant beside and below the driveway in-front of the tasting room. This will serve two purposes: the lavender will be a great landscape while being a harvestable plant.